STRENGTH THROUGH INDUSTRY & TECHNOLOGY

2nd Annual DoD Maintenance Symposium & Exhibition

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2nd Annual DoD Maintenance Symposium & Exhibition

19-21 Oct. 98

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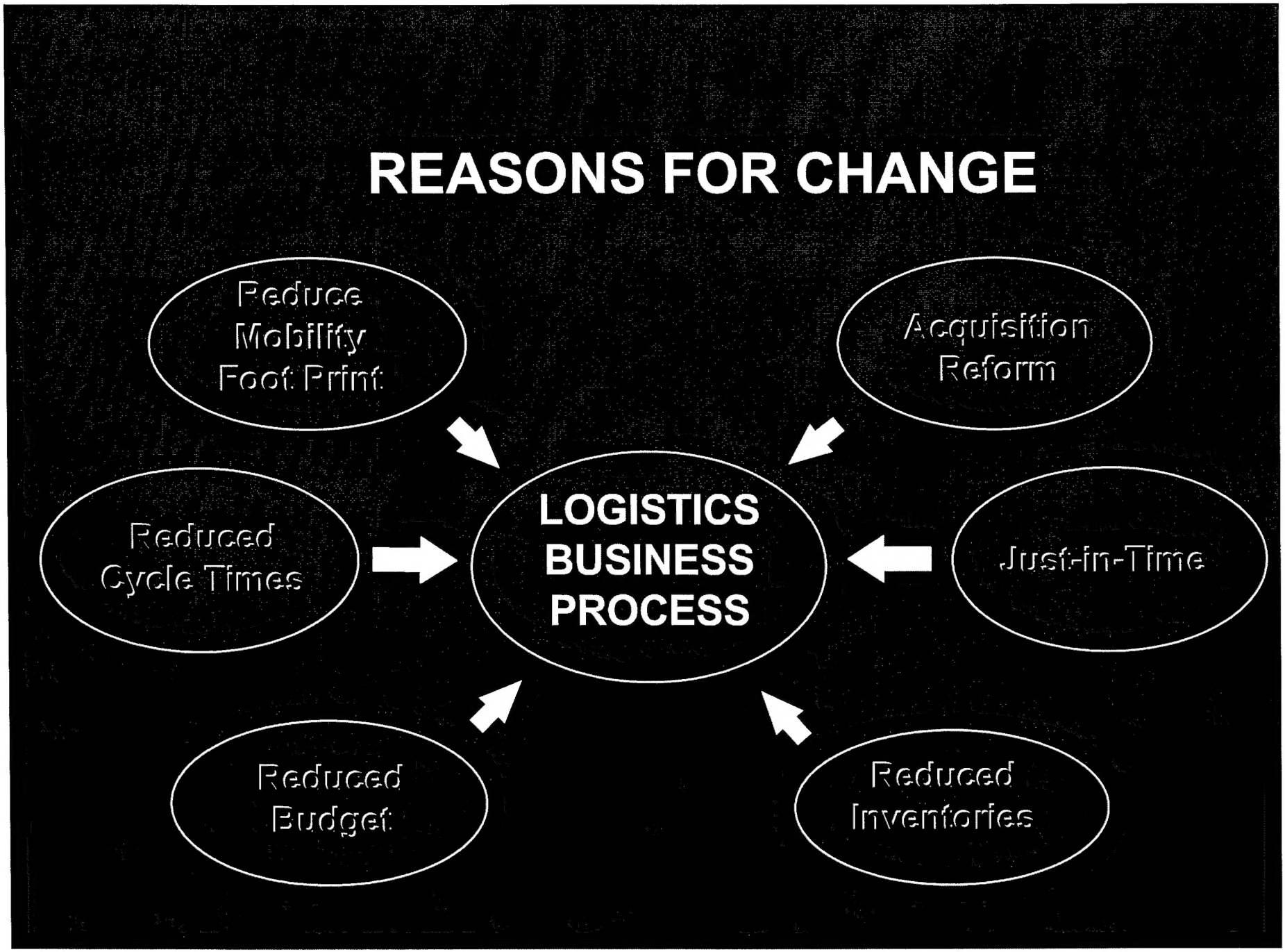
AIR FORCE AGILE LOGISTICS

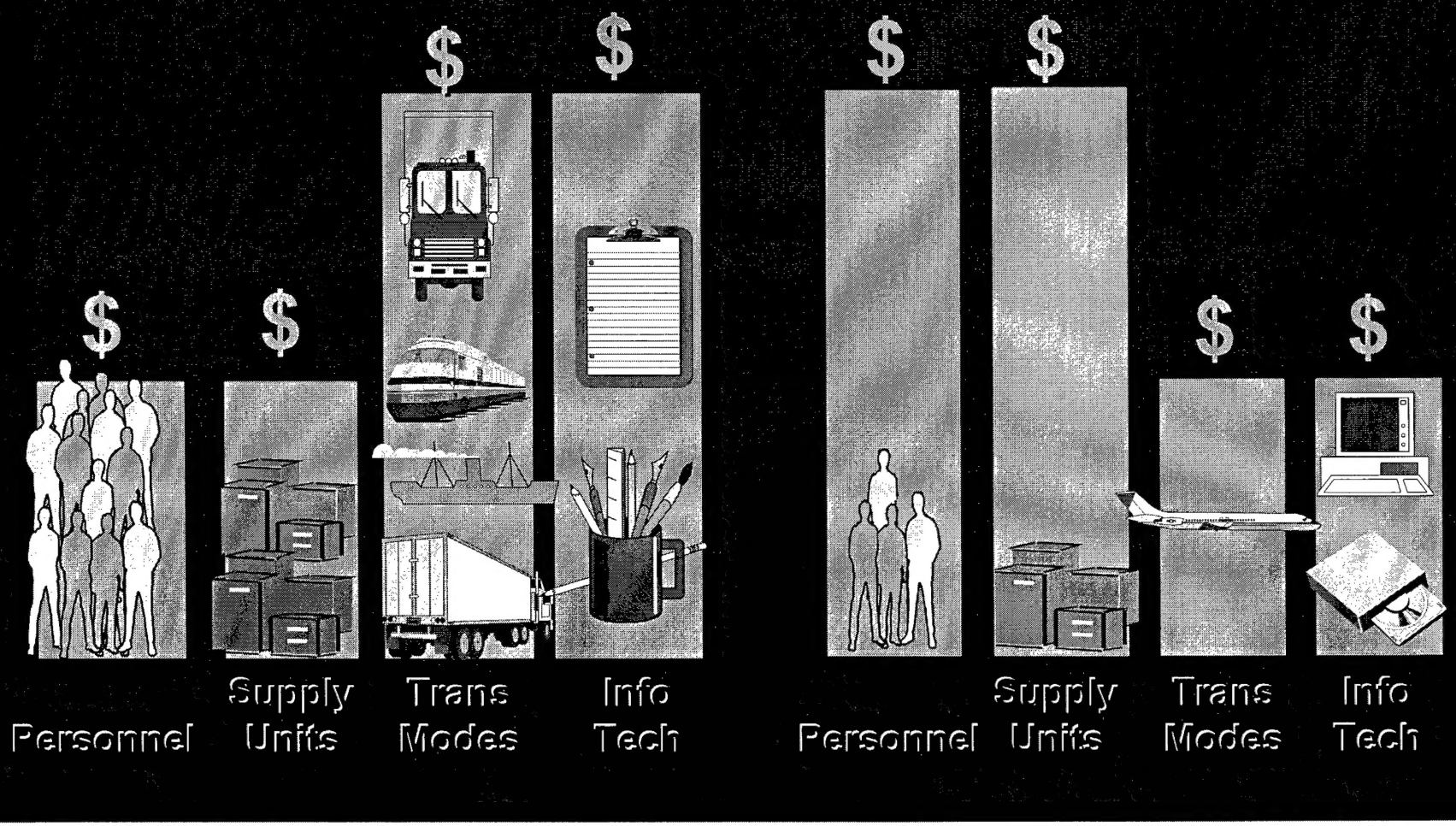
Mr Tom H. Caudill
Chief, Production Policy
HQ AFMC/LGPP
WPAFB, OH 45433-5006

OUTLINE

- Reasons for Change
- Lean Logistics
- PACER LEAN/Depot Repair Enhancement Program (DREP)
- Other Repair Enhancement Programs
  - Contract Repair Enhancement Program (CREP)
  - Aircraft Repair Enhancement Program (AREP)
- Agile Logistics Objectives (FY2000-2005)
- Summary
-

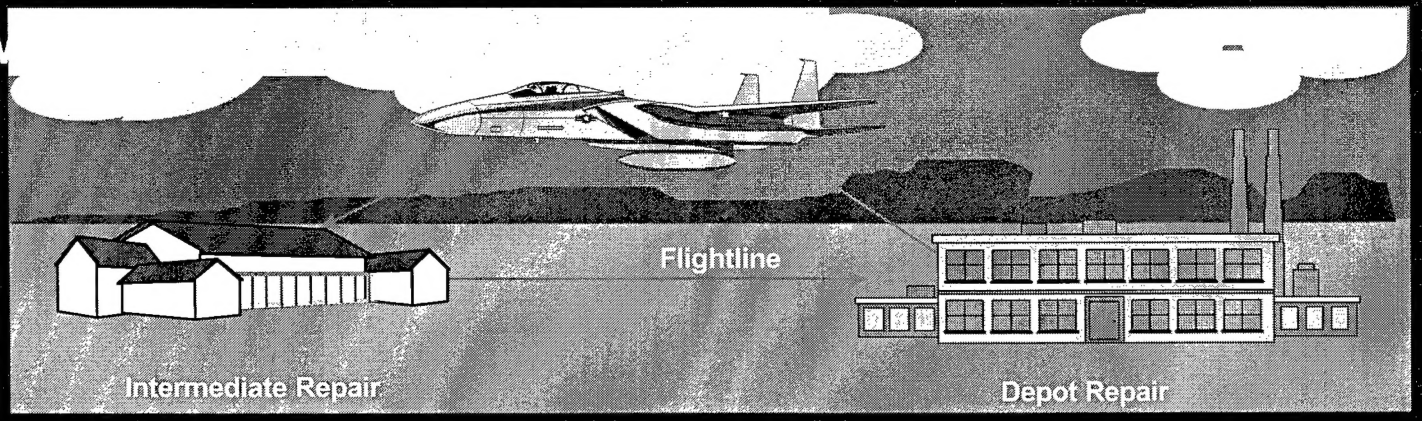

REASONS FOR CHANGE
Reduce Mobility Foot Print
Acquisition Reform
Reduced Cycle Times
LOGISTICS BUSINESS PROCESS
Just-in-Time
Reduced Budget
Reduced Inventories

REASONS FOR CHANGE

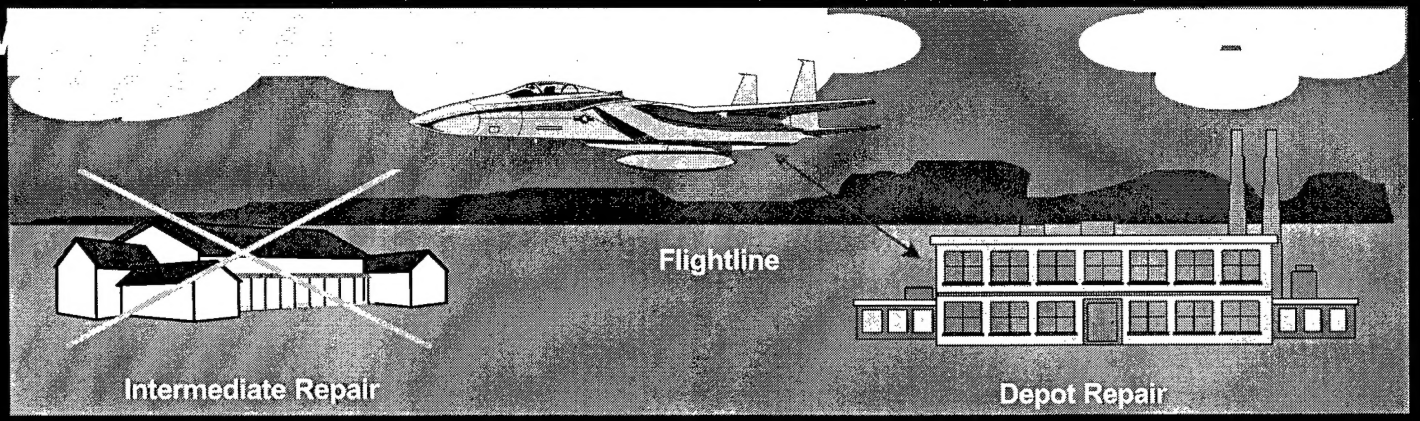


LEAN LOGISTICS
TWO LEVEL MAINTENANCE

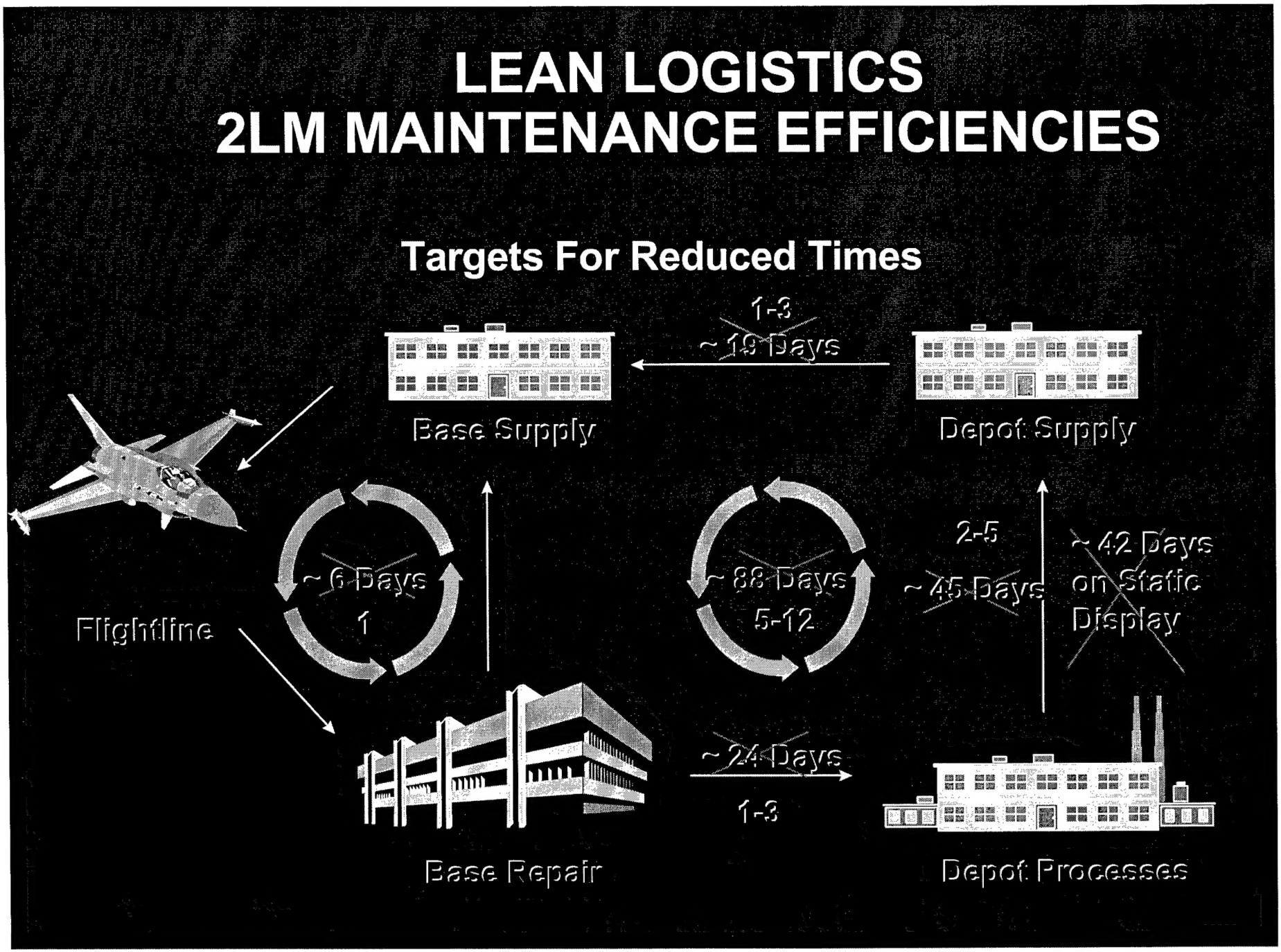
3LM



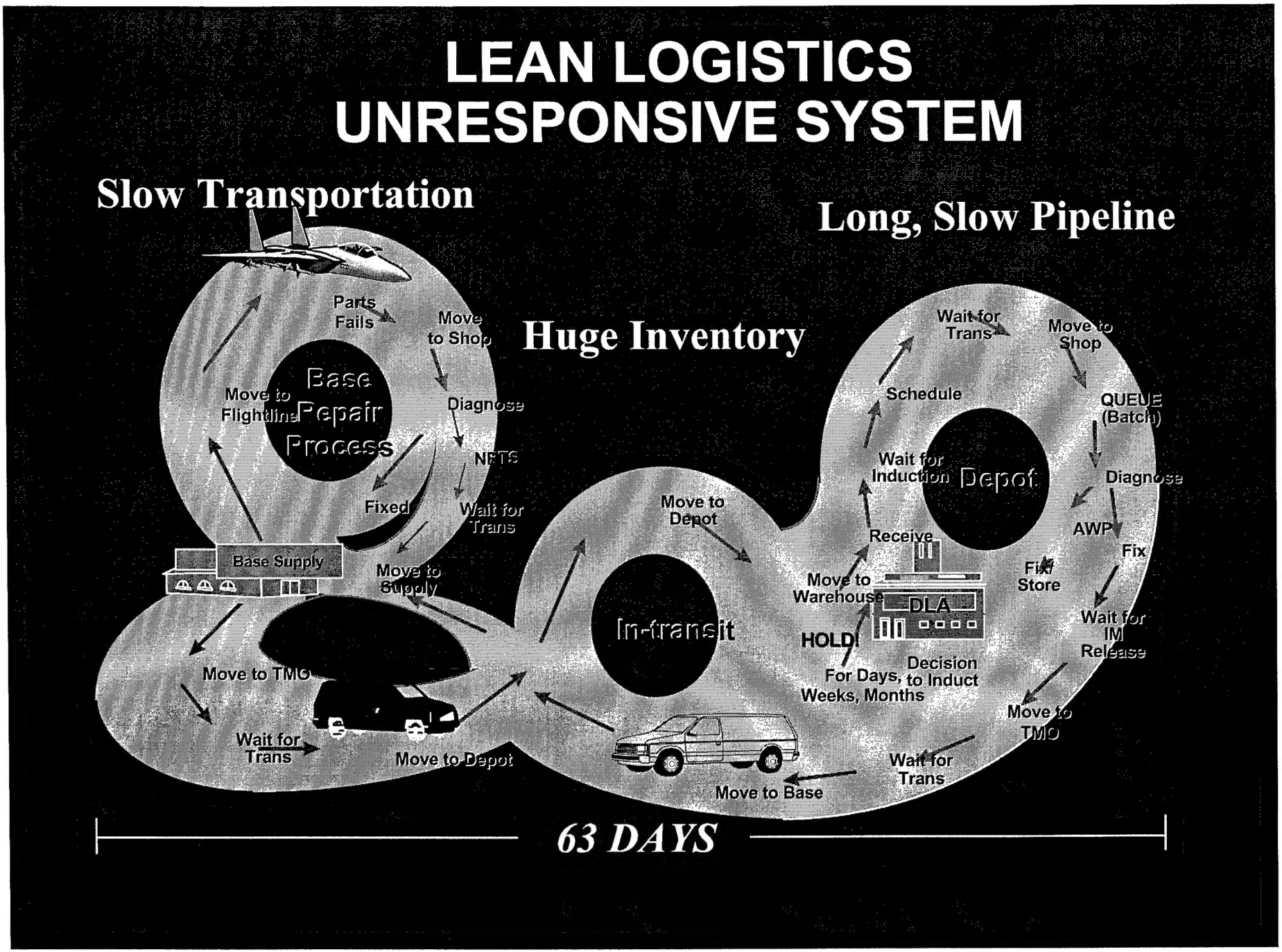
2LM



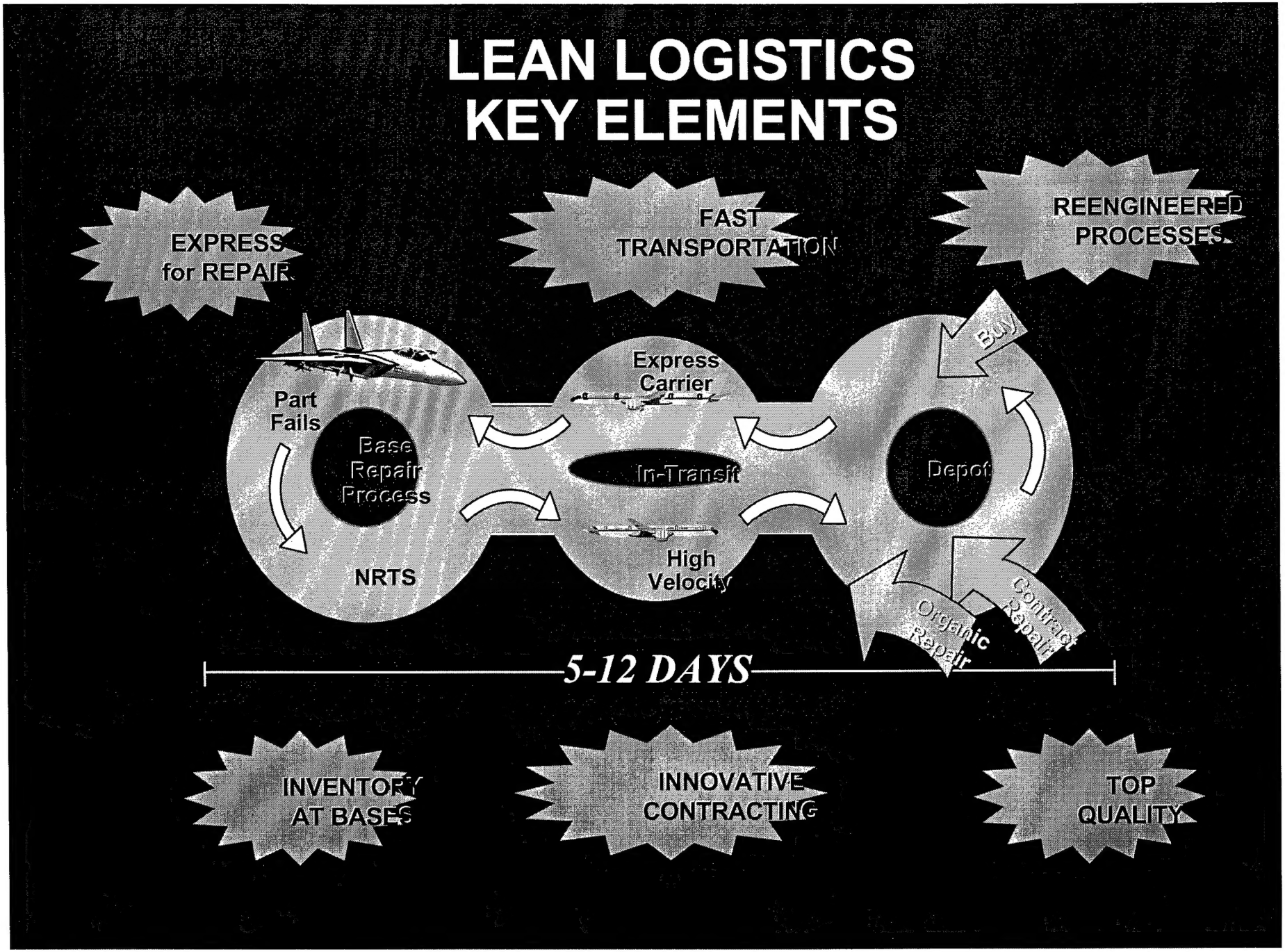
LEAN LOGISTICS
2LM MAINTENANCE EFFICIENCIES



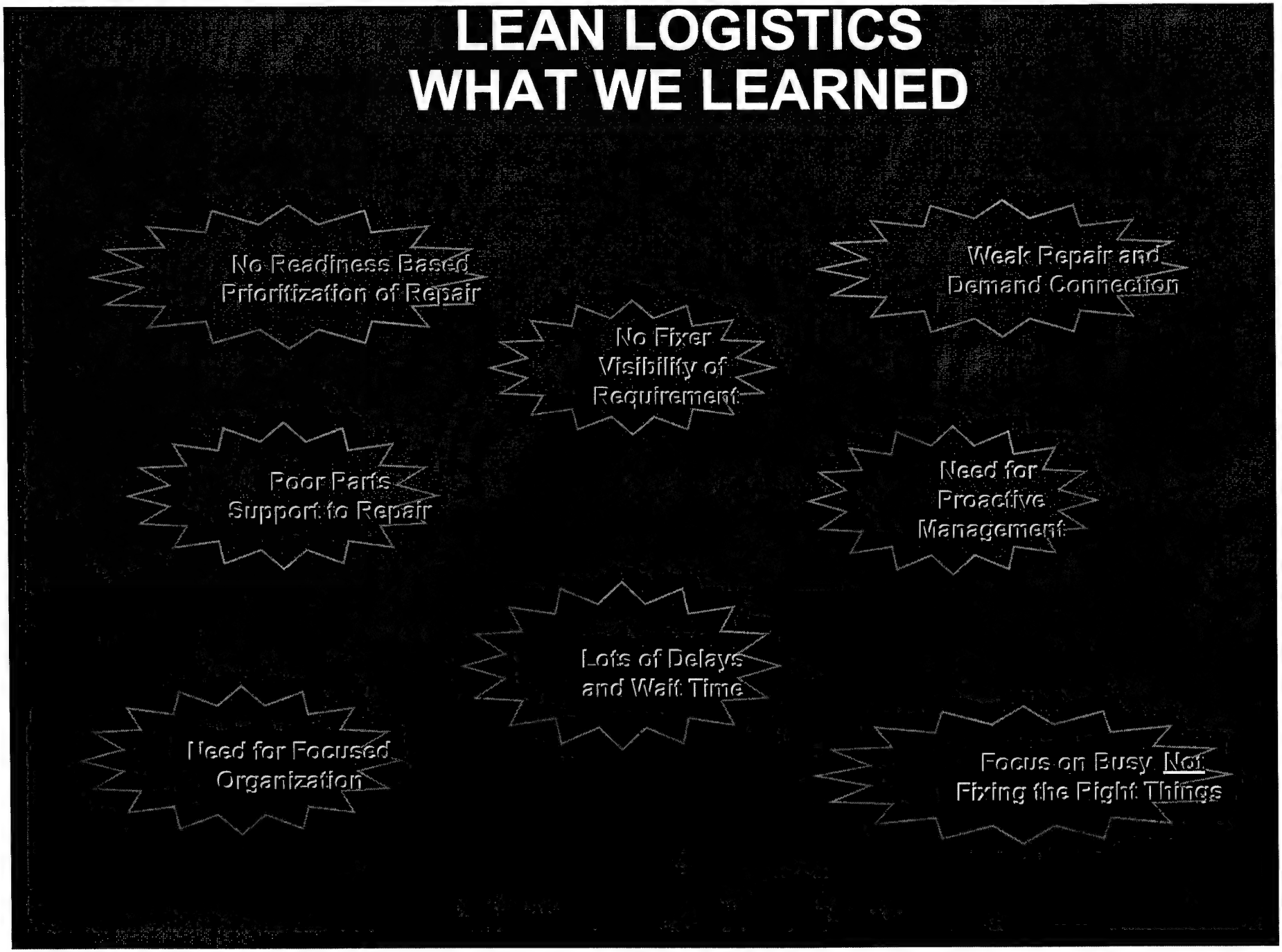
LEAN LOGISTICS
UNRESPONSIVE SYSTEM



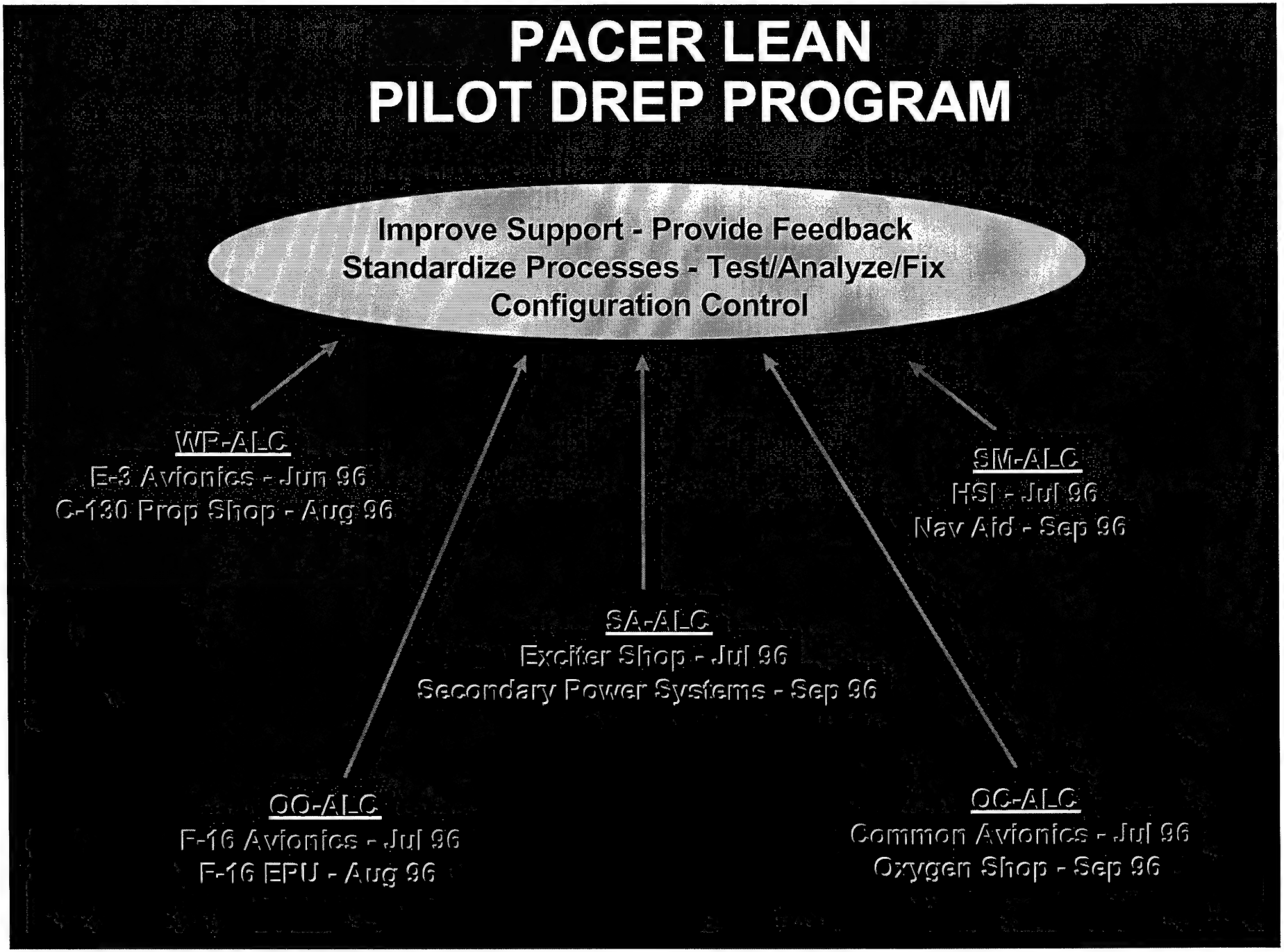
LEAN LOGISTICS KEY ELEMENTS

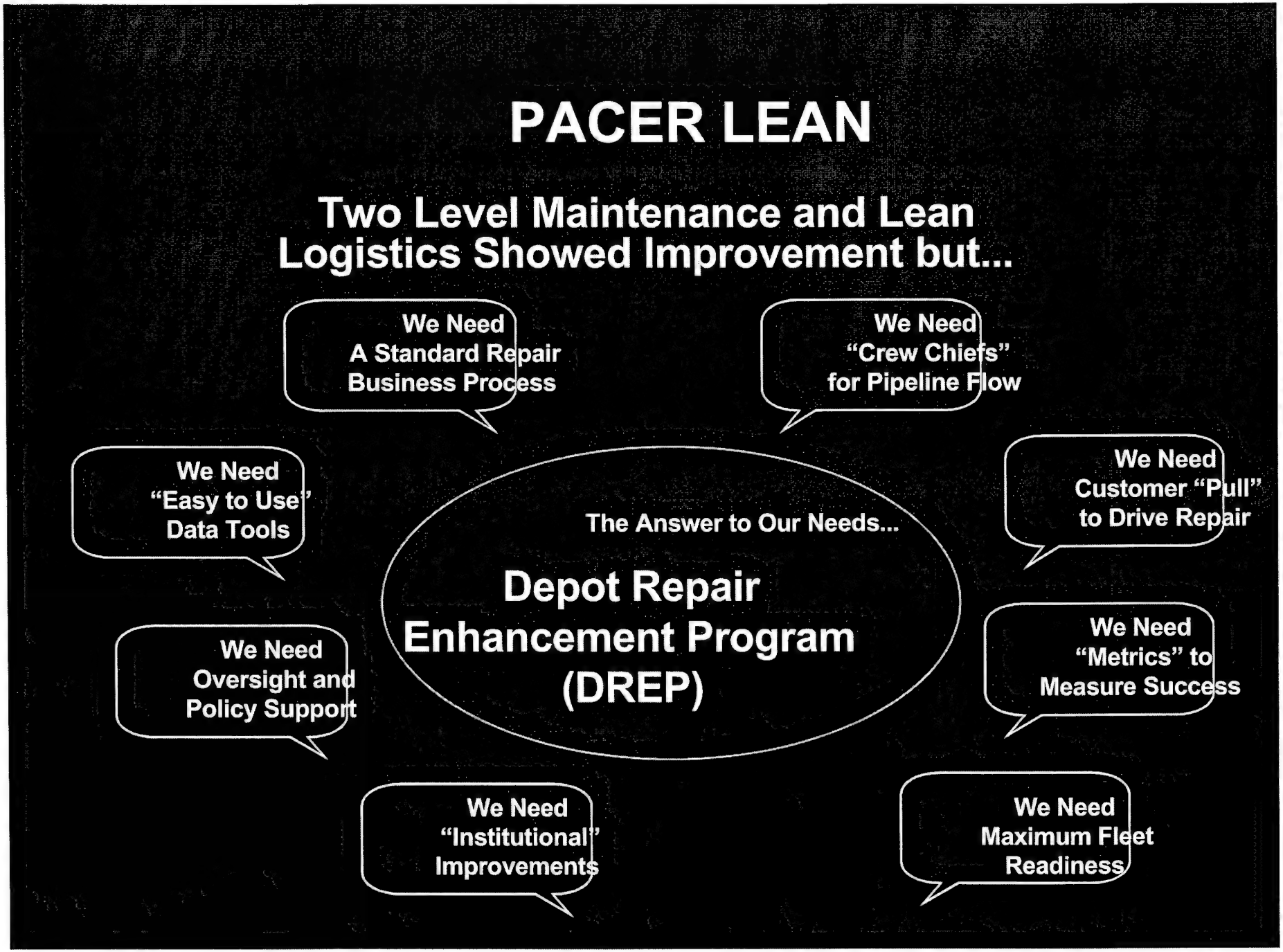


LEAN LOGISTICS
WHAT WE LEARNED

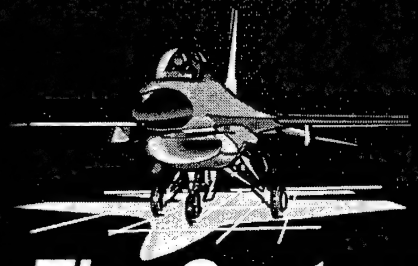


PACER LEAN
PILOT DREP PROGRAM




PACER LEAN
Two Level Maintenance and Lean Logistics Showed Improvement but...
We Need A Standard Repair Business Process
We Need "Crew Chiefs" for Pipeline Flow
We Need "Easy to Use" Data Tools
We Need Customer "Pull" to Drive Repair
The Answer to Our Needs...
Depot Repair Enhancement Program (DREP)
We Need Oversight and Policy Support
We Need "Metrics" to Measure Success
We Need "Institutional" Improvements
We Need Maximum Fleet Readiness

PACER LEAN DREP PROCESS



The Customer

Requisition Part

CAMS/SBSS

Receive Requisition

D035A

DREP Meeting

Work Constraints

Prioritize Repair

EXPRESS

Monitor Pipeline

Viz Tools

RIPDAT

Ship Assets

D035A

Prioritize Distribution

EXPRESS Distribution Module

Repair and Track Assets

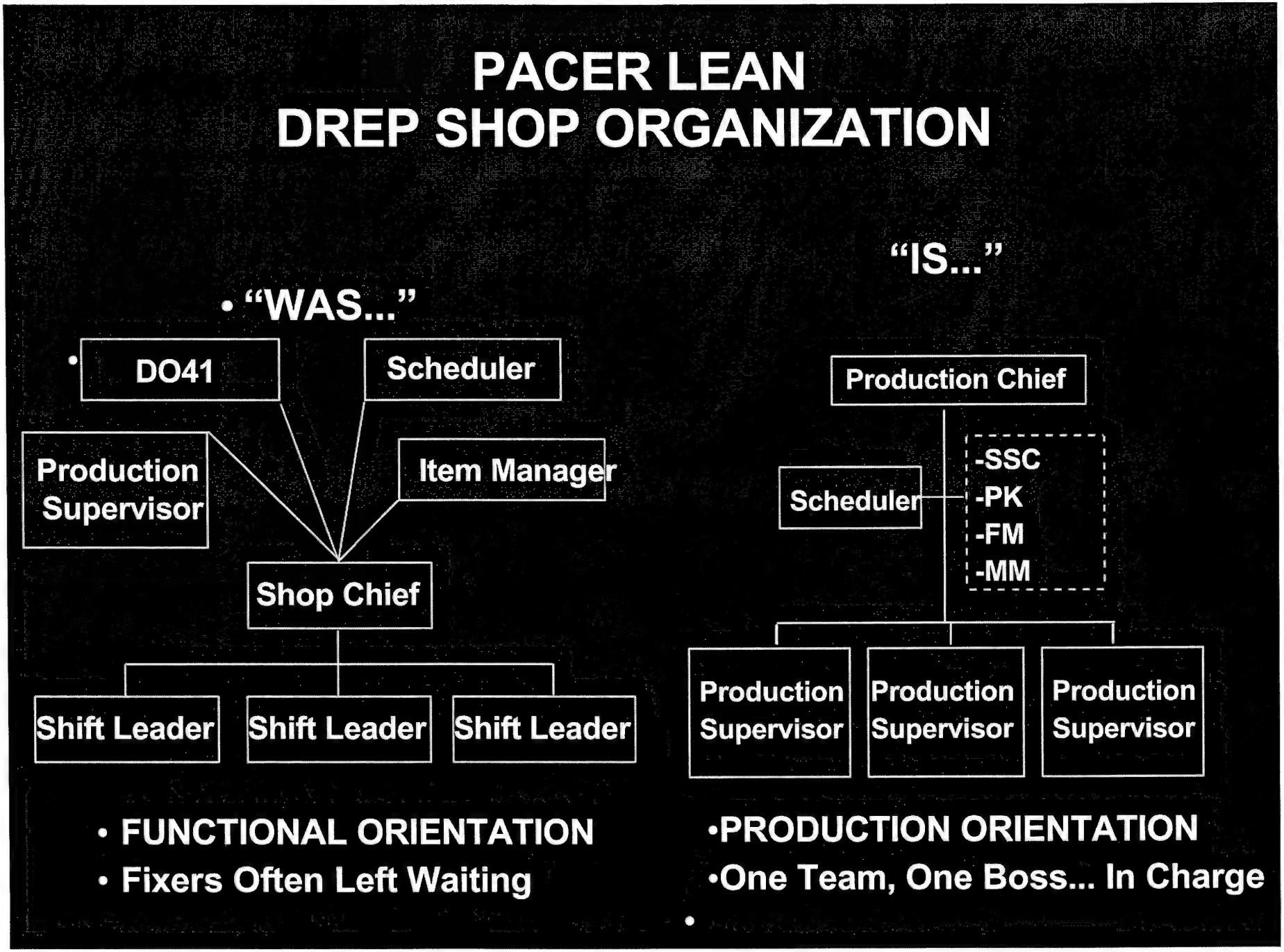
G402A, ITS

Shop Service Center

Provide Materiel Support

G402A

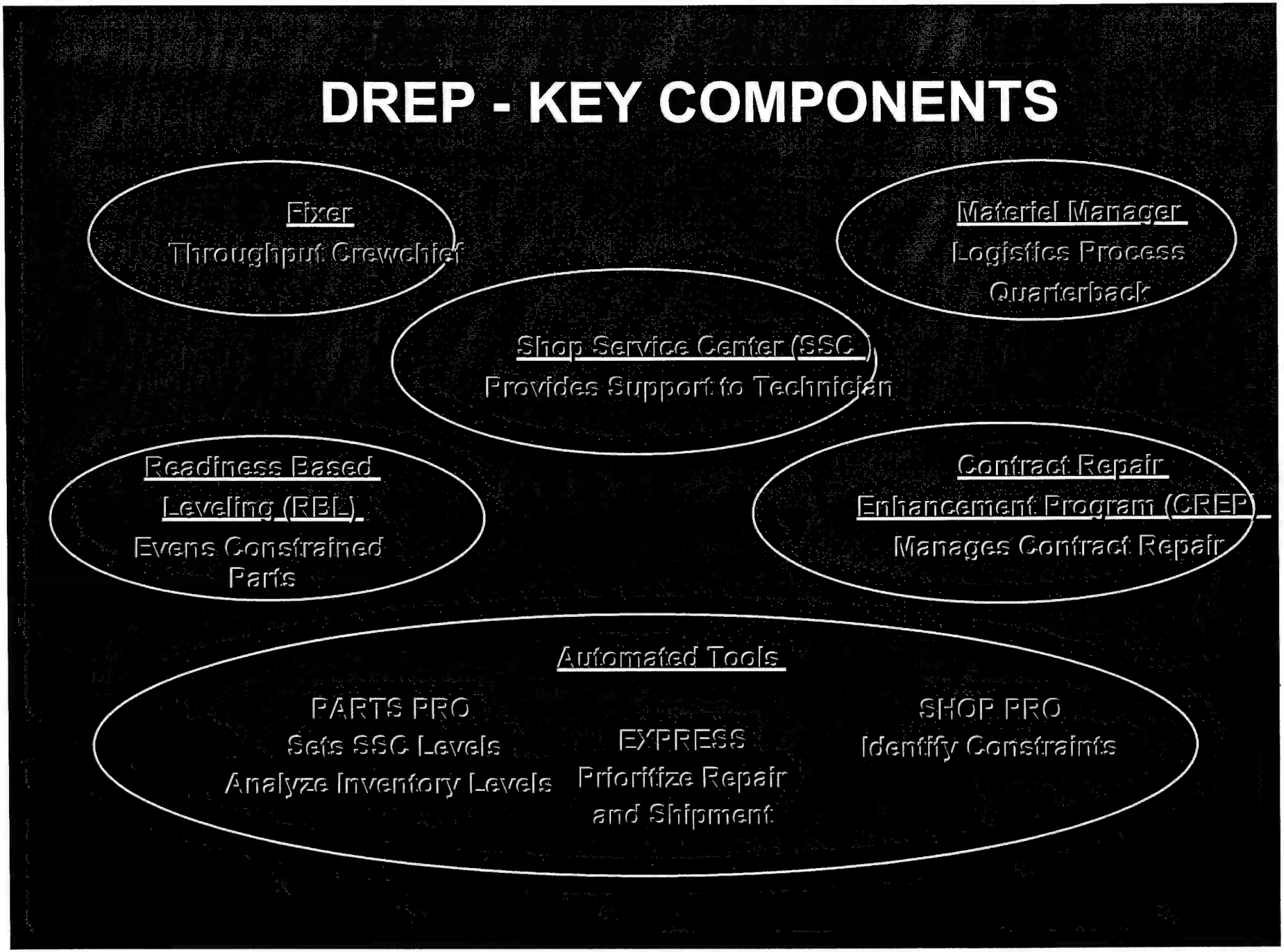
PACER LEAN
DREP SHOP ORGANIZATION



- FUNCTIONAL ORIENTATION
- Fixers Often Left Waiting

- PRODUCTION ORIENTATION
- One Team, One Boss... In Charge

DREP - KEY COMPONENTS



PACER LEAN
DREP RESULTS

- MIICAP Incidents reduced by 18 Percent
- MIICAP Hours Reduced by 20 Percent
- Number of Items On-Work-Order Reduced by 24 Percent
- Items Awaiting Parts Did Not Increase

PACER LEAN
"VIZ" TOOLS

- EXPRESS
  - Determines Repair Execution Requirements on a Daily Bases by Triggering Funding Needs in JO25A
  - Generates Prioritized Listing of Repair Requirements by Sub-group Master
    - Validates in Supportability Module
  - Checks for Carcass, Capacity, Parts and Funding
- PARTS PRO
  - Analyzes Inventory Levels for the Shop Service Center
- SHOP PRO
  - Identifies Constraints

CONTRACT REPAIR ENHANCEMENT PROGRAM (CREP)

Mirror DREP in Contract Repair

Implement Lean Logistics - Apply Acquisition Reform

Improve Support

Faster Response - Reduced Cycle Time - Minimize Costs

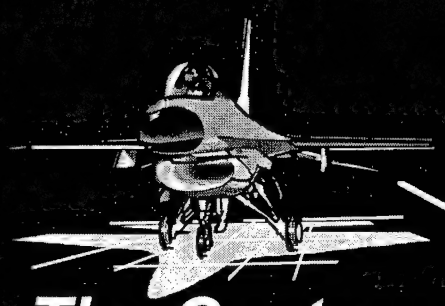
Create Partnerships with Industry

Long Term Contracts - Measure Success or Failure

Address a Variety of Contracts

Use Multiple Vehicles - Use Integrated Team Approach

CREP PROCESS



The Customer

FAILED PART

PART INFORMATION

CONTRACTOR REPAIR FACILITY

Consolidated Reparable Inventory

Government Furnished Materiel

Contractor Furnished Materiel

Air Logistics Center

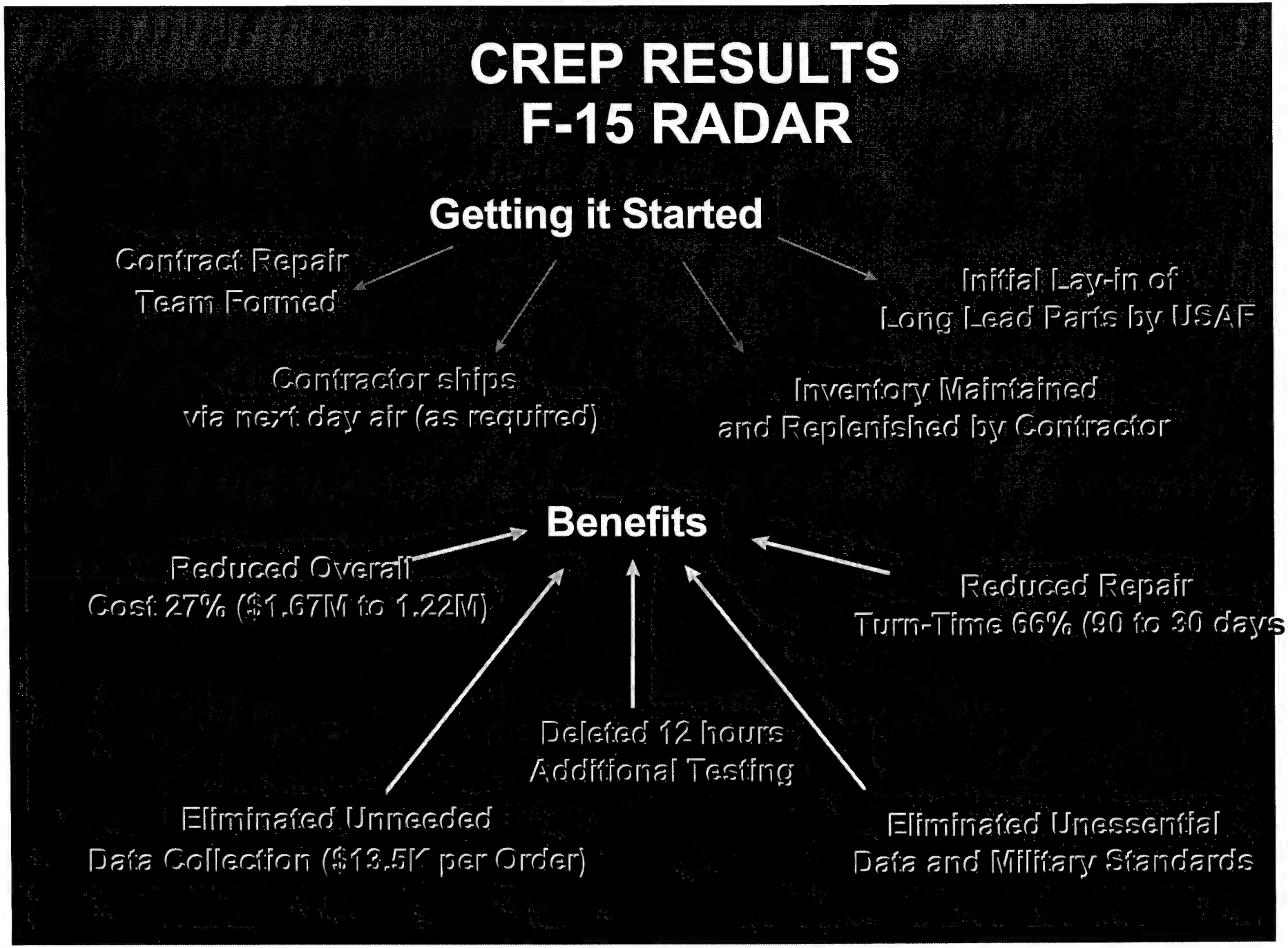
Depot Serviceable Inventory

FIXED PART

CREP TENETS

- Long Term 3-5 Year Flexible Contracts
- Direct Shipment of Reparable Carcass To Contractor
- FAST Repair
- Contractor Responsible for Parts Support
- Prioritized Shipment Direct to Unit

EXPRESS PRIORITIZES REPAIR AND SHIPMENT

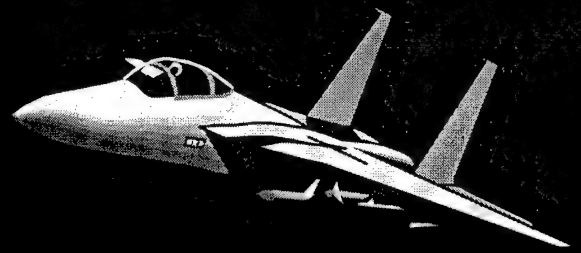

CREP RESULTS
F-15 RADAR
Getting it Started
Contract Repair Team Formed
Contractor ships via next day air (as required)
Initial Lay-in of Long Lead Parts by USAF
Inventory Maintained and Replenished by Contractor
Benefits
Reduced Overall Cost 27% ($1.67M to 1.22M)
Reduced Repair Turn-Time 66% (90 to 30 days
Deleted 12 hours Additional Testing
Eliminated Unneeded Data Collection ($13.5K per Order)
Eliminated Unessential Data and Military Standards

AIRCRAFT REPAIR ENHANCEMENT PROGRAM (AREP)

Commercial Flow Times - "D" Checks

Boeing 747 "D" Check - 30 Days

Depot Flow Times - PDM



F-15 PDM - 154 Days
C-130 PDM - 243 Days
C-141 PDM - 248 Days

COMMERCIAL VRS DEPOT MANLOADING

Commercial Manloading - "D" Checks

300 TO 500 HOURS
WORK PER DAY

Depot Manloading - PDM

200 TO 250 HOURS
WORK PER DAY

AREP

IMPLEMENT LEAN AIRCRAFT SUSTAINMENT ENVIRONMENT TO IMPROVE AIRCRAFT AVAILABILITY TO THE CUSTOMER

AREP RESULTS

50% Flow Time Reductions

C-130
243 Days to 122 Days

F-15
154 Days to 77 Days

C-141
248 Days to 124 Days

Aircraft Availability Increased

More Jets on the Ramp

Decreased Costs

Less Resources Tied Up in PDM

AGILE LOGISTICS OBJECTIVES

- Agile Combat Support
  - Reduce Flowdays 20% By FY2000/Additional 20% By FY2005
  - Reflect Users Real Requirement Vice Standard Flowdays
  - Meet End Item Delivery Commitments90% of the time By FY2000/95% of the Time By FY2005
- Cost
  - Reduce Average Customer Price 7% By FY2005
  - Consolidate Core Capabilities to Remaining Depots By FY2001
  - Develop Partnerships with Industry to Improve Capacity Usage
-

AGILE LOGISTICS OBJECTIVES

- Infrastructure
  - Define Facility/Equipment End State for FY2005
  - Divest Unneeded Infrastructure
- Workforce
  - Define FY2005 Workforce End State
-

SUMMARY

- Great Emphasis on Improving Cycle Times
- Benefits
  - Repair Time Reductions = $775M Spares Buy Reduction
  - Contract Time Reductions = Over $300M
  - Increased System Availability

Logistics
Information Superiority Experiment
(ISX)

A Proposal for Improving Warfighter Logistics Support
Through
Rapid Introduction and Integration of Advanced Technology

Problem: DoD Depot Repair Process Takes Too Long, Costs Too Much, and Adapts Too Slowly to New Requirements

- Avg DOD depot repair cycle time (DRCT) = 83 days @ $51M per day
- DRCT inventory value = $4.4 Billion
- Improvement to date inhibited by:
  - ♦Fragmented supply chain
  - ♦Antiquated "stand-alone" legacy systems
  - ♦Limited asset visibility
  - ♦Inaccurate forecasts of future requirements
  - ♦Lack of timely performance metrics
  - ♦Cultural resistance to change

NAVICP Log ISX delayed until FY99

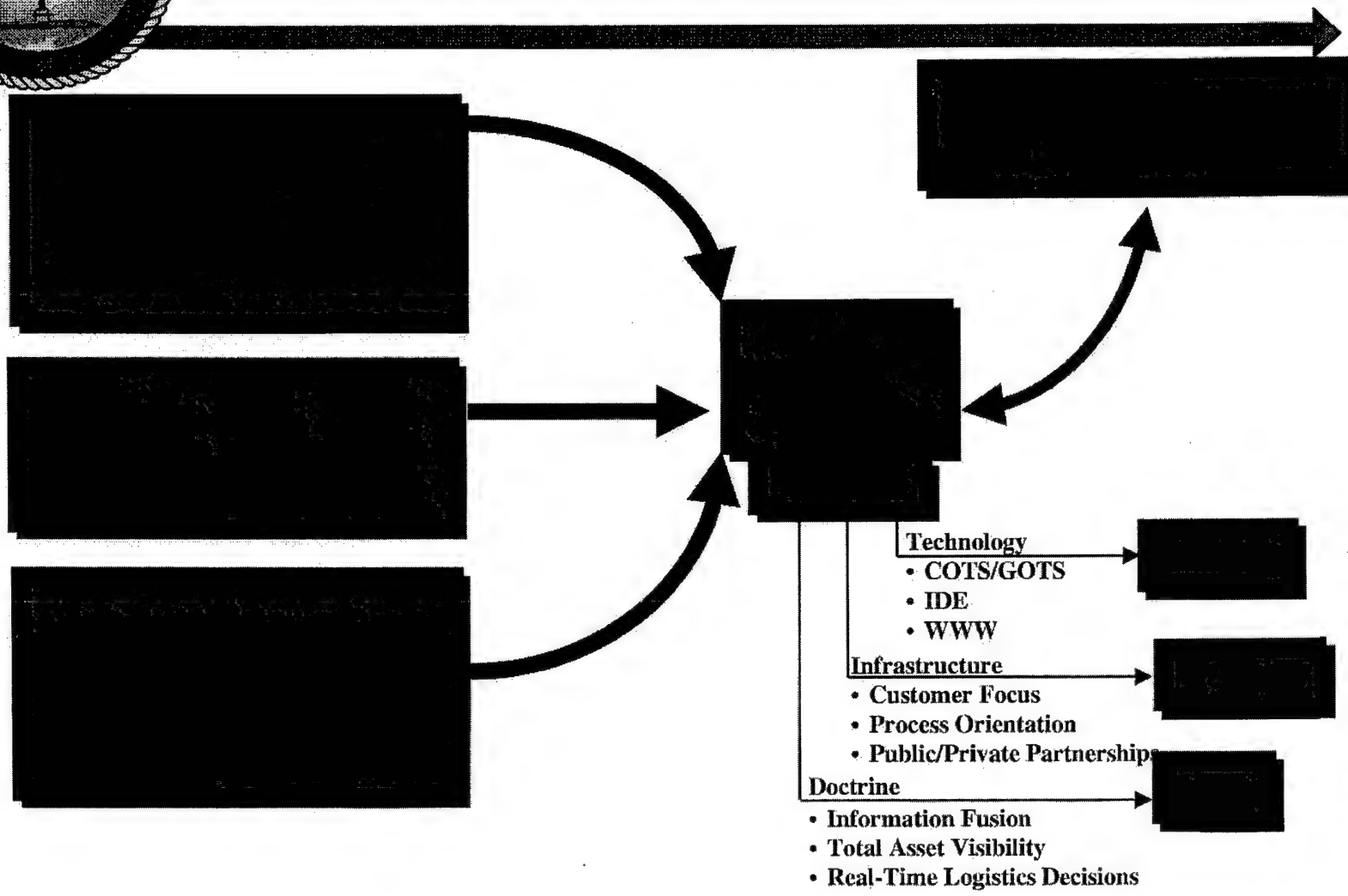
Logistics ISX Objectives

- Improve Response to Warfighter at Lower Cost
  - ♦ Advanced COTS/GOTS Information Technology
  - ♦ Integrated Supply Chain Management Techniques
- Proliferate Lessons Learned Throughout DOD

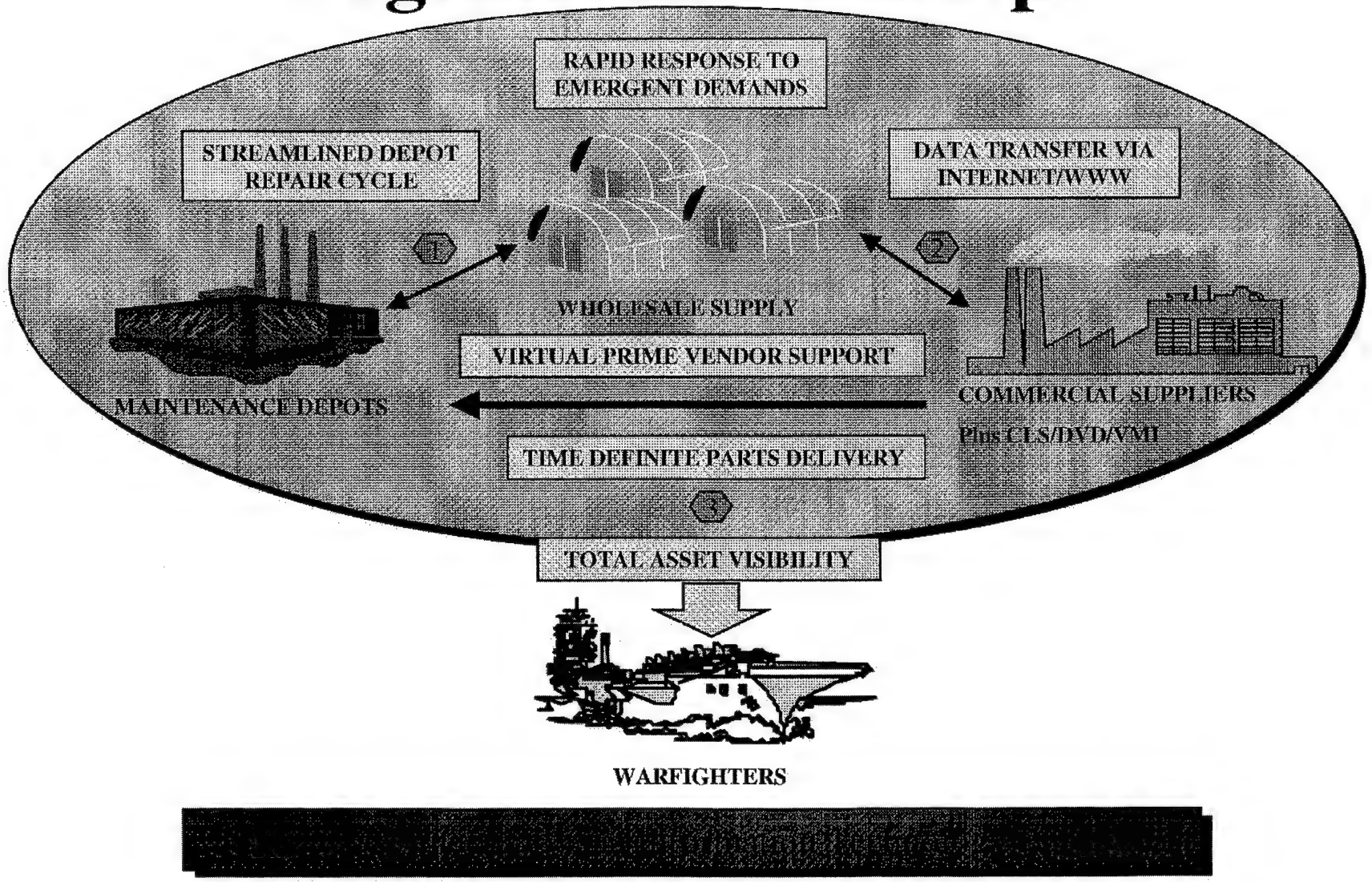
Linkage to Joint Vision 2010

- **Focused Logistics is a key element of the JV2010 strategy for achieving Full Spectrum Dominance**
- Providing Focused Logistics involves meeting several critical challenges, such as:
  - ♦ Information Fusion
    - → Near real-time command/control of logistics
    - → Clear picture of overall support posture
  - ♦ Joint Deployment/Rapid Distribution
    - → Joint/seamless materiel distribution system
    - → Quick response to emerging requirements
  - ♦ Agile Infrastructure
    - → Minimal logistics footprint in forward areas
    - → Tailored combat support packages

The Total Picture



Logistics ISX Concept



Information Network Interfaces

- **Supply-Maintenance Interfaces**
  - ♦ Integration of COTS supply chain packages and recent GOTS developments with COTS MRP II to achieve seamless information exchange
  - ♦ Shared data regarding repair requirements (priorities, due dates, & quantities) and depot production status
- **DoD-Vendor Interfaces**
  - ♦ Data transfer via Internet between COTS MRP II/supply chain management systems and virtual prime vendors
  - ♦ On-demand/just-in-time repair parts delivery to depots
- **Logistician-Warfighter Interfaces**
  - ♦ Complete asset visibility via JTAV
  - ♦ Real-time logistics decision support

Functional Characteristics

Repair Process Management
- COTS MRP II Functionality
- Customer-driven Inductions
- Increased Responsiveness
- Faster Turnaround Times

Repairable Asset Management
- Integrated Supply Chain
- Customer-driven Requirements
- Rapid Reprioritization
- Smaller Pipeline Inventories

Parts Support
- Virtual Prime Vendors
- Data Exchange via WWW
- Time Definite Deliveries
- Flexible On-demand Mfg

Asset Visibility
- Warfighter Focus
- JTAV Interface
- Info partnerships/data sharing
- Consumption
- Reliability

Proposed Approach

- **Identify representative systems/components for prototype tests**
- **Determine system interfaces/protocols needed for successful integration of depot COTS MRP II software with applicable supply processes and systems**
- **Utilize COTS/GOTS applications to facilitate integrated supply chain management functionality**
- **Establish/simulate real-time electronic connectivity for:**
  - ♦ Virtual prime vendor support
  - ♦ CLS/DVD/VMI
  - ♦ JTAV interface
- **Develop data base that will allow sensitivity analyses and quantitative verification of test results**

Success will equal

JCS View

Use COTS tools to fuse logistics information and ascertain whether integrated supply management policies can:

-reduce repair cycle time

-improve Warfighter Readiness

-reduce logistics support costs

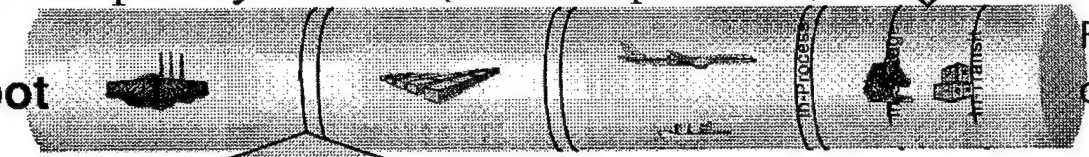
JMRR
Aircraft Engine Maint Backlog
IPL

Log ISX 2.0

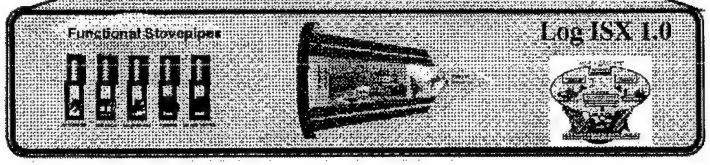
CY 2000

JMRR
Aircraft Spares Shortages
IPL

Depot Repair Cycle Time (Maint/Repair Parts)



In-Process **In-Storage** **In-Transit** **In-Theater**



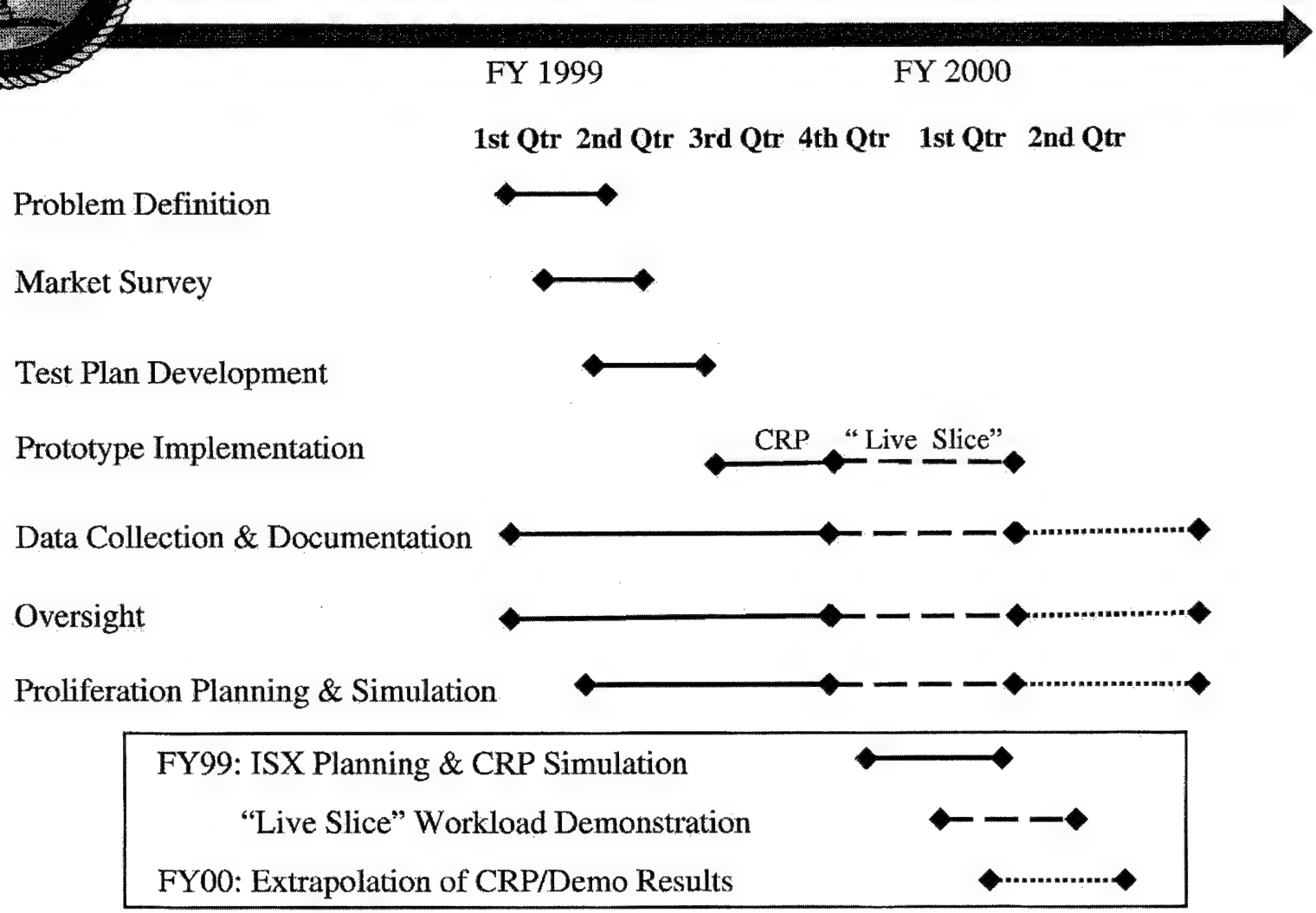
Readiness Enhancement thru Logistics Response Time Reduction

•Internally Focused	•Speed of Information	**•Warfighter Focused**
•Stovepiped	•Network-centric	•Integrated
•Unresponsive	•Simulation-based	•Interoperable

JMRR
Total Asset Visibility
IPL

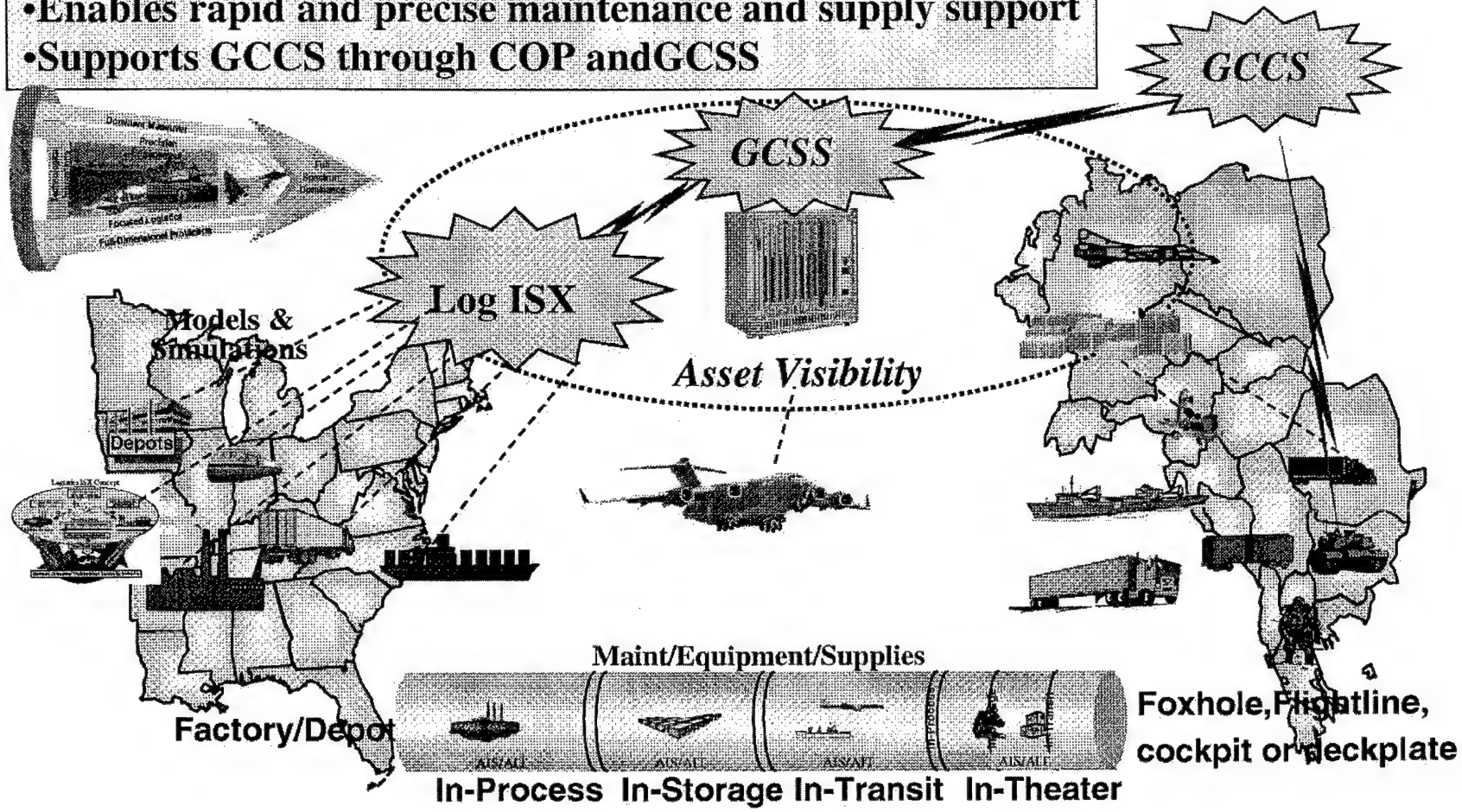
037

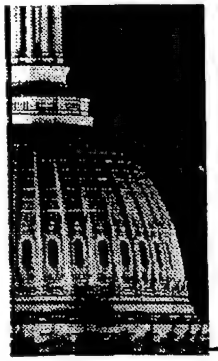
Milestones


FY 1999
FY 2000
1st Qtr
2nd Qtr
3rd Qtr
4th Qtr
1st Qtr
2nd Qtr
Problem Definition
Market Survey
Test Plan Development
Prototype Implementation
CRP
" Live Slice"
Data Collection & Documentation
Oversight
Proliferation Planning & Simulation
FY99: ISX Planning & CRP Simulation
"Live Slice" Workload Demonstration
FY00: Extrapolation of CRP/Demo Results

Log ISX Value to the Warfighter

- **Shorter repair cycle time enhances combat readiness**
- **Assists in total asset visibility, tracking, and control**
- **Enables rapid and precise maintenance and supply support**
- **Supports GCCS through COP andGCSS**





Competitive Sourcing Panel

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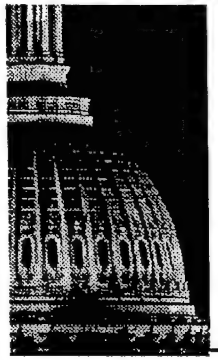
DoD Maintenance Symposium

19 October 1998

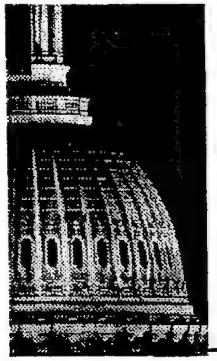
Jim Hopp



Definitions

- **Outsourcing + Privatization = Competitive Sourcing**
  - **Outsourcing: The process of contracting-out functions that are traditionally done in-house to the private sector (or another provider). Facilities and equipment are usually furnished as GFM.**
  - **Privatization: The process of shifting in-house functions to the private sector (or another party) by selling the assets necessary to perform the function.**
  - **USD(A&T): "Competitive sourcing of all but inherently governmental functions and the rapid reduction in the civilian and military workforce…" is one of the courses of action to reduce costs within DOD.***

* USD(A&T) speech to AUSA, 9/2/98



Survey Data

- **44% of retailers are outsourcing operating functions to 3rd parties**
- **< 30% of Supply Chain functions are outsourced, except for Transportation of goods. On average:**
  - **Transportation 54%**
  - **Information systems 26%**
  - **Warehousing 24%**
  - **Manufacturing 24%**
  - **Repair/Warranty 20%**
  - **Procurement 17%**
  - **Inventory Management 9%**

Source: KPMG Global Supply Chain Study, Jan 98. Prepared in conjunction with J.L. Kellogg Graduate School of Management, Northwestern University

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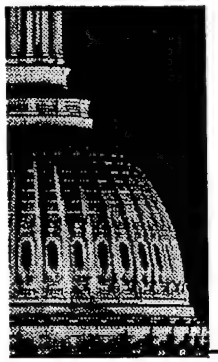
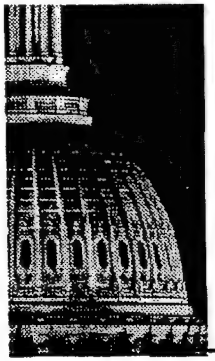


Opportunities

- Base Support Services
- Depot Maintenance
  - **Aircraft PDM**
  - **Major end item repair & overhaul**
  - **Component overhaul & repair**
- Supply Chain Management
- Training
- Technical Services
- Public-Private Partnerships



Public-Private Partnerships (PPV)

- PPVs are authorized by numerous Sections in 10 USC.
  - Provide increased utilization of under-utilized capacity and equipment.
  - Provide opportunity for retention and utilization of skills that are needed for wartime surge.
  - Reduce O&M costs and capital requirements to the partners
- There are examples of PPVs that are saving DOD and industry money.
- Must be a business arrangement that all parties view as beneficial and makes economic sense.
- The authority is available; direction to implement is needed.

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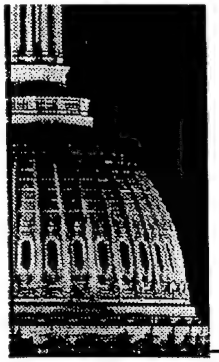

Issues

- **Need to clearly identify "CORE" functions.**
  - **50/50 requirement**
  - **Different by Service**
  - **Confusion within DOD and Industry. What really is "CORE":**
    - **Is the C-17 with its Flexible Sustainment concept?**
    - **Is the C-5 since it was the subject of a PPV competition?**
    - **Are commodity shops like Hydraulics & Instruments at SM-ALC?**
- **How to implement Public-Private Partnerships.**
- **How to make the best use of the Center for Industrial and Technological Excellence (CITE) authority for win-win business arrangements**

045

Logistics Transformation

DoD Maintenance Symposium

J. A. Jones
Defense Logistics Agency
October, 1998

Overview

- Themes of the QDR and DRI

- Results in brief--1998 Defense Science Board Summer Study, "Logistics Transformation"

Defense Reform Initiative Mandates Change

Reforming the "Business" of Defense

"Strength with Speed"

Explicit/Implicit Goals	Principles of Reform	DRI Initiatives
1. Achieve World Class Standards of Performance	Focus enterprise on unifying vision	Reengineer: Adopt Commercial Business Practices
2. Minimize cost	Commit the leadership to change	Consolidate: Streamline organizations to remove redundancy and maximize synergy
	Focus on core competencies	Compete: Apply market mechanisms to improve quality, reduce costs, and respond to customer needs
	Streamline organizations for agility	Eliminate: Reduce Excess support structures to free resources and focus on core competencies
	Invest in people Exploit information technology Break down barriers between organizations	

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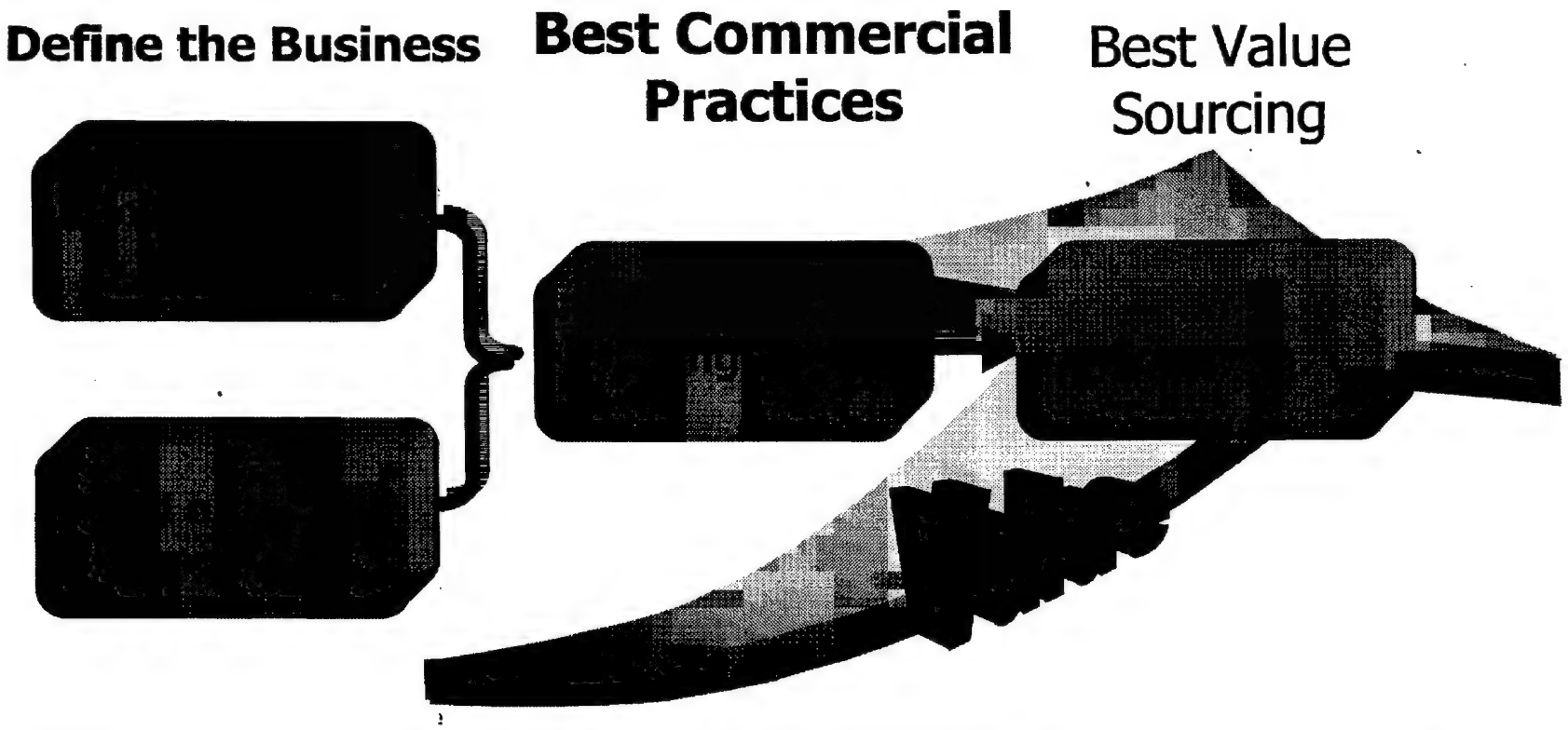
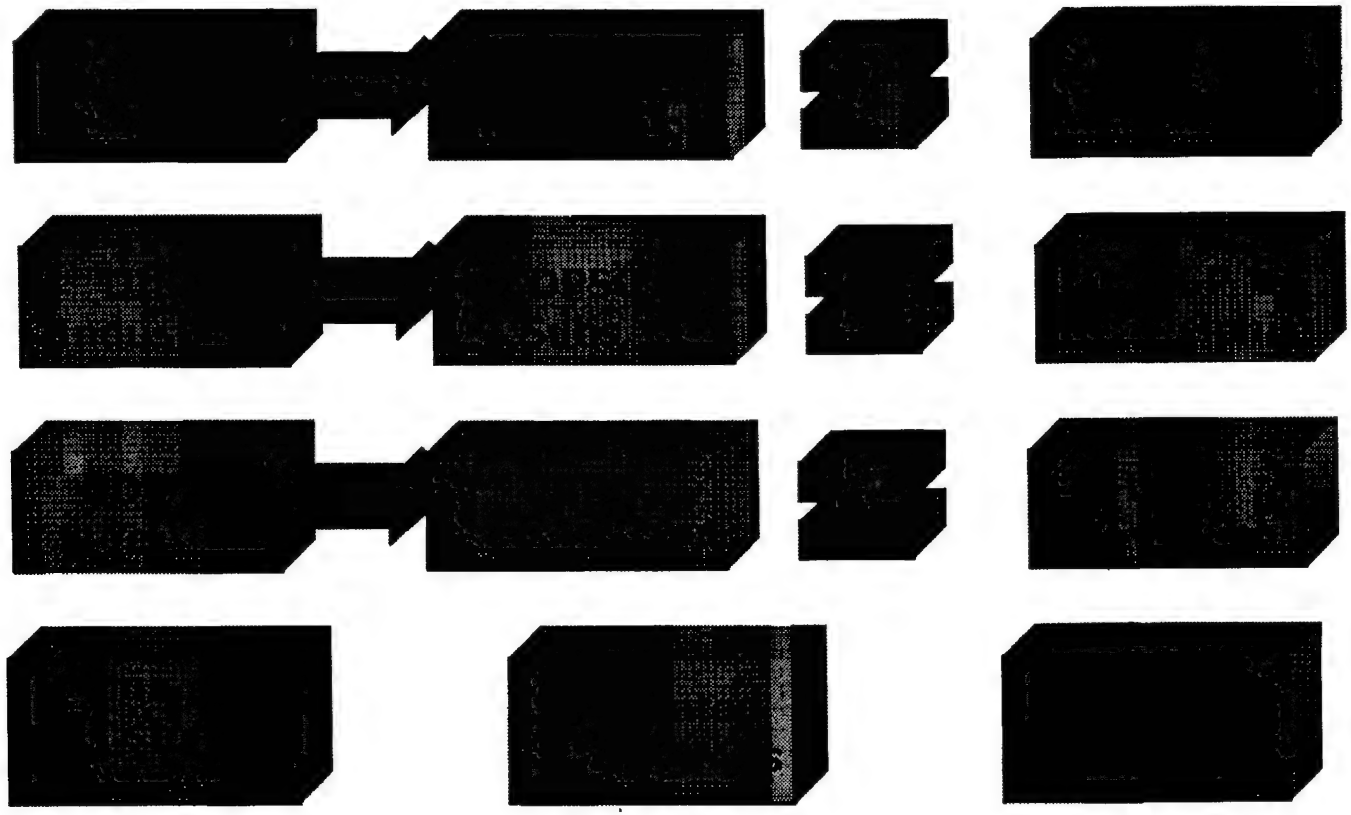
Basic Process Used Successfully at DLA



049

Consolidate & Eliminate



050

Re-engineer

- Incorporate best business practices across the system
  - Follow the market; don't make business emulate DoD
  - Best practices may not be *defense* industry
    - Most of DLA's "Prime Vendor" arrangements are with non-defense industry
  - Buy IT solutions where possible

051

Compete

- Look for what private sector already does best
  - Performance-oriented statements of objectives
  - Make targets attractive for complete product lines
  - Encourage broadest possible range of responses from public & private sectors

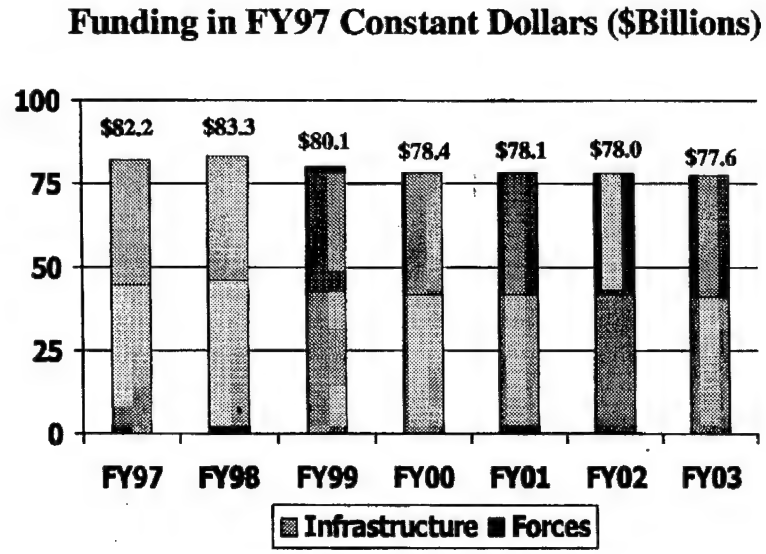
052

The 1998 DSB Summer Study

053

Logistics Cost Baseline

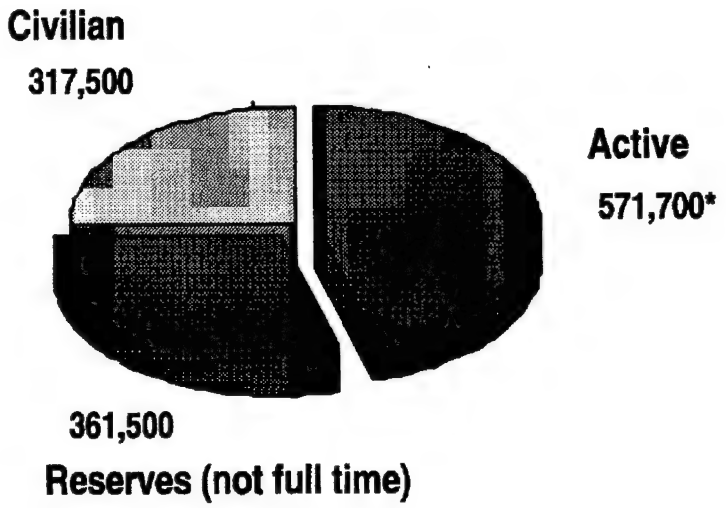
Logistics



Source: LMI

Logistics Personnel

Total = 1,250,000 people



* Active combat forces 290,000 -- half size of active logistics forces

1/3 of DOD budget and nearly 1/2 of DOD manpower is in Logistics

The Transformed Logistics System -- Needs/Objectives

- Support the requirements of our 21st Century strategy and forces to rapidly deploy and sustain significant combat power.
  - Operate with poorly developed infrastructure
  - Minimize the in-theater footprint
  - Be agile, responsive and survivable
- Enable the CINC/JTF Commander to execute his war plan effectively, flexibly and with limited risk
- Exploit today's technology to provide greatly enhanced logistics support at significantly less cost
  - Be well integrated with commercial logistics partners
  - Employ advanced business processes and information systems

Findings in Brief

1. ***Theater CINCs unable*** **to exercise Title 10 logistics responsibilities**
2. ***DOD logistics system fragmented*** **--No end to end control, integration, performance, or accountability**
3. ***Reducing demand*** **is key to enhancing effectiveness/cutting costs**
4. ***Changing how we deploy*** **and sustain is necessary**
5. ***Vulnerabilities*** **need more attention**

Issue 1 -- CINC Pull - Findings

- CINC's are unable to exercise Title 10 responsibility to plan and manage theater logistics
- Services push initial deployment supplies to theater with little CINC/theater planning and control
  - Unneeded materiel clogs lift and pipeline
  - Increases sustainment burden
- Combat forces lack confidence in the logistics system and build "iron mountains" to compensate

057

CINC Pull -- Recommendations

1. ***Designate Theater CINC logistics component commanders***
   - Reports directly to theater CINC
   - Manages all common support/services in theater (peacetime training and war)
   - Experiment with JFACC model (task a service component commander)
2. ***Improve Theater CINCs logistics Information Tools***
   - Dynamic planning/simulation tools
   - Ability to specify deployment and sustainment packages, do consequence analysis, change "on-the-fly"
   - Provide CINCs the ability to directly locate and redirect assets

058

Issue 2 -- Logistics Information Systems and Processes - Findings

- ***Current systems are fragmented, ineffective and fail to exploit current technology and practices***
- ***DOD lacks an overall vision*** **of how to transform the logistics system to the needs of JV2010**
- ***A master functional overhaul*** **of today's fragmented logistics system is a prerequisite to "focused logistics."**
  - **Major corporations (including Caterpillar, Proctor & Gamble, DuPont, Cisco, Wal-Mart, FedEx and Boeing)**
    - **Reengineered their logistics processes to gain competitive advantage**
    - **Modernized their information systems to support business goals**
    - **Placed control of transformation under a senior level champion**
- ***Commercial experience*** **shows that tools and practices must be developed together.**

059

Recommendation: Appoint a Logistics System Architect who is:

- ***A senior official*** **reporting directly to USD(A&T)**
- ***Works closely with***
  - **Service/Agency/CINC logistics leadership**
  - **Industry logistics management leaders**
- ***Whose appointment***
  - **Is made by SECDEF**
  - **Is affirmed by the Chairman, JCS**
  - **Transcends administrations**

090

Recommendation: Appoint a DOD Logistics System Architect to:

- ***Define*** **system-wide functional performance and cost goals**
- ***Lead in integrating*** **logistics business processes -- supply chain management**
- ***Co-develop*** **logistics business practices and information systems vision**
- ***Develop functional and technical architecture*** **& execution roadmap**
- ***Work with JCS/CINCs to ensure that logistics are integrated*** **with operations**
- ***Develop/manage the implementation/transition plan***
  - **Decentralized implementation by service and DLA**
- ***Control funding,*** **establish metrics and monitor performance of the Logistics System Transformation transition plan**

061

What Mus

- *An architecture*
  practices and m
  - Functional spe
    interface speci
  - Focused on wa
  - Evolutionary m
    requirements
- *A supporting IT*
  - Resides within
    congruent witl
  - Facilitates info
    systems archit
  - Measures for d
    projects to the

Issue 3 -- Demand Reduction - Findings

- Today's forces are too heavy to permit rapid deployment unless most equipment is prepositioned in the theater
- Reducing weight and size has a big payoff for early entry and continuous combat
  - Faster deployment of combat forces
  - Smaller footprint in theater
  - More agile forces
  - Lower costs
- Reduces on-going sustainment burden
- Opportunities to reduce demand include:
  - Redesigned Force Structure and Equipment
  - Other Demand Management Techniques

Demand Reduction -- Recommendations

1. *Force Structure*
   - Reduce size & weight (Examples: Army After Next (AAN), Smart Ship)
     - Must overcome cultural barriers, e.g., crew size, unmanned vehicles, artillery vs. missile
     - Focus R&D on "agile force" with fewer platforms
2. *Equipment: Make PMs responsible* for Total Ownership

   Cost -- Operational Support accounts for 60% of LCC
   - Demand Reduction significant objective of JROC/PBS
     - Invest to reduce life-cycle costs (set ROI of 3-5:1)
     - Improve reliability, maintainability
     - Decrease fuel/ammo/power consumption
   - Reduce weight, crew size
3. *Competitively source weapon systems and* equipment support above organization level

A Major Commercial Focus

Army IETMs can save $1.8B over 10yrs on 24 W/S

064

Issue 4 -- Deployment and Sustainment - Findings

- ***Today's capabilities fall far short of meeting 21st Century needs***
  - **Only very light forces are deployable in days**
  - **Deploying significant land-based combat power depends on PREPO or ocean shipping (weeks to close)**
  - **Shortfalls in over-the-shore and primitive port capabilities are also a major limitation and risk**
- ***Supporting processes are inadequate*** **and fail to exploit current technology**
  - **Deployment planning systems are inflexible and slow; also data are inaccurate and often out of date**
  - **Responsibility for process is fragmented -- many seams**
- ***Commercial world is investing in related logistics capability*** **-- all enabled by IT**

Deployment and Sustainment Recommendations

1. ***Exploit commercial lift*** **to meet future requirements**
   - Use the growth in large commercial airlift fleet to support strategic deployment
     - Enhance CRAF to meet military requirements (door width & height, deck height, floor strength)
     - Make CRAF use a key design criteria for land forces equipment
   - Aggressively pursue other lift technology in commercial sector
2. ***Support alternatives to delivery through fixed ports***
   - Many operations will occur in underdeveloped areas
   - Example: Joint Logistics Over the Shore Sea State 3+ yields 20-180% operating time improvement
3. ***Execute Defense Reform Initiative Decisions (DRIDs)***
   - Need unified movement system
   - Authority to influence transportation systems acquisition

Issue 5 -- Survivability - Findings

- **The spectrum of threats is very broad and includes:**

Adversary Actions	Environment
IW/EW against log system	High seas, winds
Chem/bio attack on log nodes	Undeveloped ports, airfields
Opposed delivery (e.g., mines, subs)	Civil disruption(e.g., refugees)
Disruption of ports, airfields	Natural disasters

- **Considerable recent attention to logistics vulnerability**
- **Most attacks have limited impact if planning anticipates**
  - **Most vulnerable points are takeoffs and landings of airlift, disruption of PREPO in deployment, and civilian infrastructure during sustainment**
  - **Serious vulnerabilities against concerted SOF-like attack (PREPO afloat, DLA centers, supporting civilian industry and infrastructure)**
- **Sophisticated IW/CBW attacks could be devastating to logistics**

Survivability -- Recommendations

1. ***CJCS direct J4 to review comprehensively*** **logistics/ PREPO vulnerability and report initial results in four months and detailed results to SECDEF within nine months.**
2. ***Include Red Team assaults*** **against logistics in wargames and simulation exercises, joint and Service (CJCS)**
3. ***Apply same IW standards*** **to logistics as being used for other portions of the C3I system (Process Owner)**
4. ***CJCS direct J4 action to assure*** **that logistics-unique aspects of CBW are included in planning for operations and logistics**

Logistics Transformation -- Implications

Issue	End-State Cost Savings	Investment	Impact
1. *Strengthen CINC Pull**	Significant inventory reduction $1-2 B	Planning tools, prognostics, etc $150M per year	Greatly enhanced theater log support, and responsiveness; reduced footprint
2. *Designate a Logistics Architect Develop an integrated process and system**	Potential for 10-15% direct labor; 15-30% indirect ($3-$6B); 5-15% non-labor ($1-3B)	Studies, focused systems, tools, etc--$140 M; Execute systems modernization within current systems $1.8 B budget	Ability to achieve "focused logistics"; true JTF supportability; Platform for continuous modernization; "Truly a national asset"
3. *Demand Reduction**	$1-2 B / Year	R&D, reliability enhancements $500 M / year	Faster deployment of combat capability, smaller footprint, more flexibility, less maintenance; reduced lift burden, and military lift investment
4. Commercial Lift Capabilities	Avoid future military lift investment	$100 M/year	Greatly increased lift and reduces need for new investment in lift assets
5. Vulnerability	Opportunity Cost	$100 M / year	Avoid casualties and loss of assets: reduced risk to military support

*Addressed in the 1996 Summer Study

The Transformed Logistics System

- Will provide the needed logistic support for our 21st Century strategy and force (JV 2010)
  - Able to rapidly deploy and sustain significant combat power
  - Deploy and operate despite a poorly developed infrastructure
  - Operate with a greatly reduced in-theater footprint
  - Be agile, responsive and survivable
- Will enable the theater CINC to execute his war plans and Title 10 responsibilities
- Will exploit today's technology and commercial capability to accomplish the above -- with fewer dollars and manpower resources

Major Action Items

SECDEF

- *Appoint Logistics System Architect*
- *Refocus logistics system to CINC Pull*
- *Designate CINC / JTF CINC Logistics Component Commander*

CJCS

- *Refocus logistics system to CINC Pull*
- *Designate Theater CINC Logistics Component Commander*
- *Provide requirements for dynamic planning/simulation tools to tailor deploying forces*
- *Establish requirements to integrate logistics and operations*
- *Implement survivability recommendation*
- *Add demand reduction to JROC criteria*

071

Summary

- Focus moving to customer-defined outcomes
- Role of maintenance is key to size of in-theatre footprint
- Deliberate planning to reduce maintenance requirements is important to getting forces to the fight on time
- ***Tomorrow's vision--less maintenance is better!***

Thanks for Having Me!

Marconi
North America

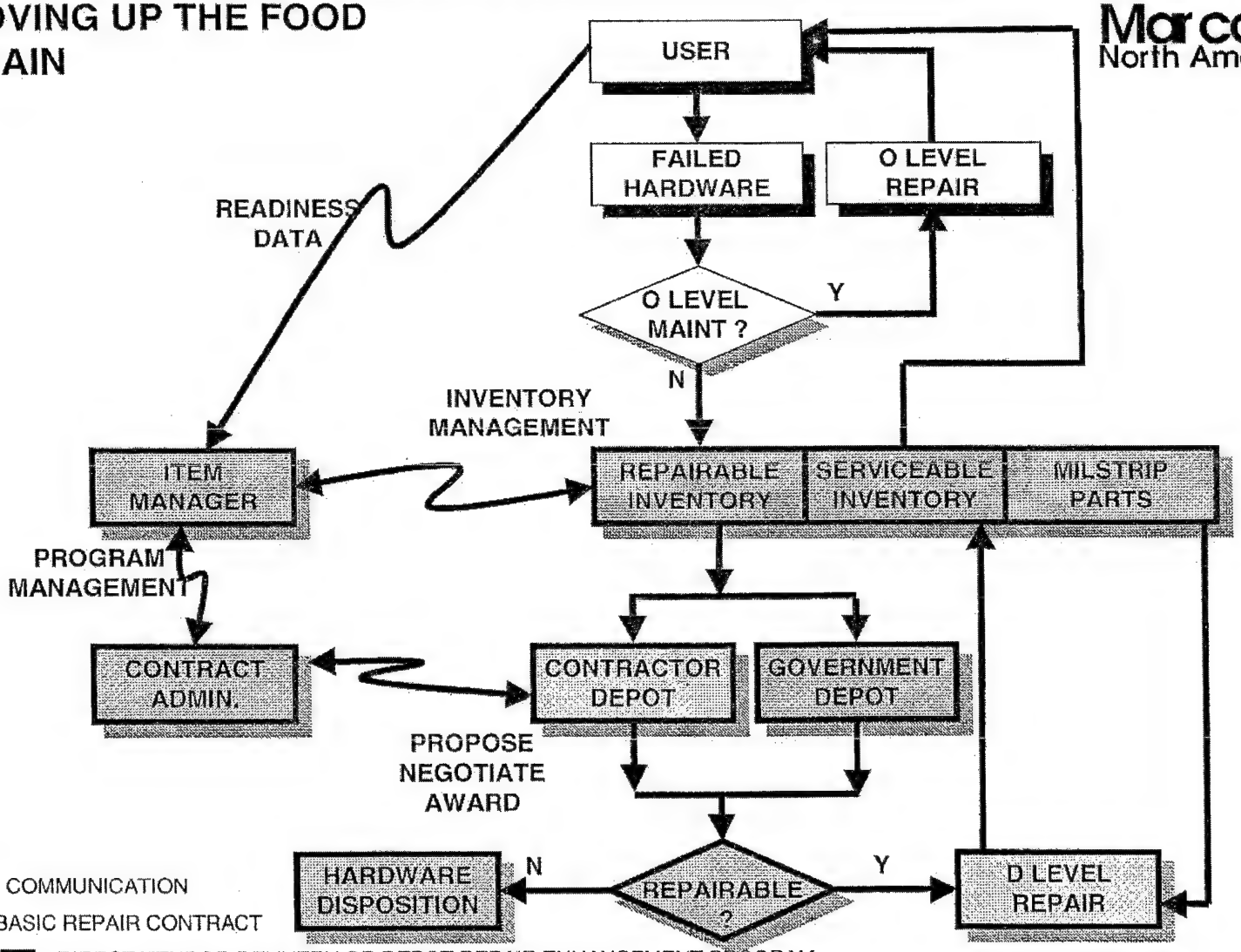
Reducing Response Times
- A Contractor Perspective

- Marconi Avionics operates in three support contracting modes:
  - Traditional - FFP or T&M Contracts
    - F-16, C-17, AC-130H/U Head Up Display repair
  - Contemporary - Contractor Logistics Support (CLS)
    - AC-130U All Light TV Turret, AH-1S Weapon Aiming System, F-22 Head Up Display
  - Modern - Direct Vendor Delivery (DVD)
    - Standard Central Air Data Computer and Digital Signal Data Computer for C-2/E-2, S-3, F-14, & EA-6B

Lewis

MOVING UP THE FOOD CHAIN

Marconi North America



Marconi Avionics

075

Marconi
North America

Reducing Response Times
- A Contractor Perspective

- A Definition of Direct Vendor Delivery
  - The provision by a vendor of serviceable material to meet the user's requirements without the intervention of, or need for, organic inventory managers, warehousing, material handling, and transportation systems, while providing increased product reliability and reduction of total cost of ownership.
    - (Paraphrased from Navy definition)

Marconi
North America

Reducing Response Times
- A Contractor Perspective

- Using DVD, DoD wants:
  - Increased Supply Availability
    - Single inventory management point
    - Electronic Data Interchange (EDI)
  - Improved Reliability
    - Technology Insertion
    - Control of Obsolescence
  - Lower Cost of Ownership
    - Reduced Inventory,
    - Reduced Oversight
    - Reduced Manpower
  - Acceptable Exit Criteria
    - Orderly close-down and completion at contract termination

Marconi
North America

Reducing Response Times
- A Contractor Perspective

- We provide:
  - Rapid Supply Support Response
    - Rotable Pool (48 hrs max. to user's dock)
    - Inventory Warehousing, including Consumable Parts Stock
    - Fast Transportation
    - Reduced Repair Turnaround Time
  - Reliability Improvements
    - Reliability Tracking
    - Repair/Replacement/Overhaul at our discretion
    - Modification and Product Improvement
    - Configuration Control and Status Accounting
  - Field Service Support, User Training, and Maintenance of Technical Documentation

Marconi
North America

Reducing Response Times - A Contractor Perspective

- Enhancing the DVD environment
  - Web-accessible database
    - Tiered access based on need-to-know
  - Serial number tracking
    - Immediate visibility of what, where, and when
    - Read/write "touch button" available now
    - On-unit log book provides total maintenance history
    - Rapid recognition of, and reaction to, pattern failures
  - Paperless environment
    - User friendly, pull-down menus minimize data entry for mechanics/technicians
    - Provides ready access to MTBR incentive-related data
    - Streamlines contract and accounting processes.

Marconi
North America

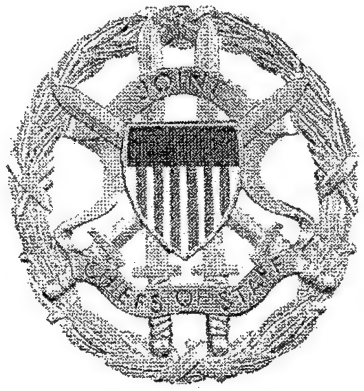
Reducing Response Times
- A Contractor Perspective

- Contract issues that inhibit efficiency
  - Excessive application of Government Source Inspection
    - Traditional and CLS contracts
    - Not applied to DVD contracts
  - Legacy QA processes
    - Older contracts still subject to MIL QA requirements
    - Use of ISO9000 requires separate approvals
  - FFP contracts requiring individual repair POs
  - Accommodation of Over and Above repairs

Marconi
North America

Reducing Response Times - A Contractor Perspective

- In Summary
  - User improves readiness
  - Government reduces cost of ownership
  - Contractor increases revenue
  - A win-win solution!



Focused Logistics - Phase II
1998 Defense Maintenance Symposium

As of 1 October 1998

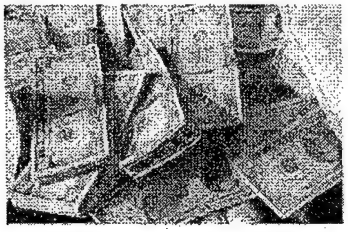
AGENDA

- ✔ Changing Environment
- ✔ Focused Logistics
- ✔ Maintenance Operations

Coping With A Changing Environment

- ✔ Base Force Review (1991)
- ✔ Bottom-Up Review (BUR) (1993)
- ✔ Commission on Roles and Missions of Armed Forces (CORM) (1995)
- ✔ Quadrennial Defense Review (QDR) (1997)
- ✔ National Defense Panel (NDP) (1997)
- ✔ Defense Reform Initiative (DRI) (1997/98)
- ✔ Mobility Requirements Study (MRS 05) (1998/99)

Balanced, Capable and Affordable Defense Program



A Changing Environment

The Defense Budget

WHERE WE WERE

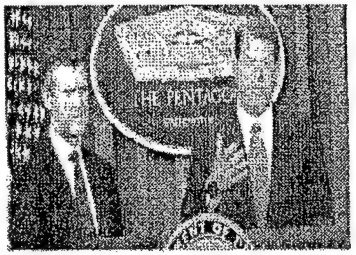
A DOD Budget that consisted of 28% of our national budget and 7% of our nation's gross national product

Reduced to

WHERE WE ARE TODAY

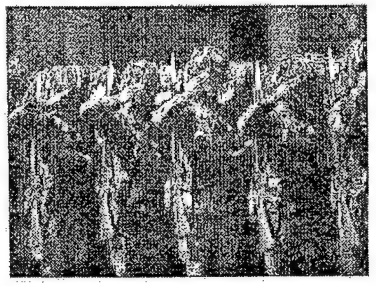
A DOD Budget that consisted of 15% of our national budget and 3.5% of our nation's gross national product

40% defense budget reduction



A Changing Environment

Force Structure



WHERE WE WERE

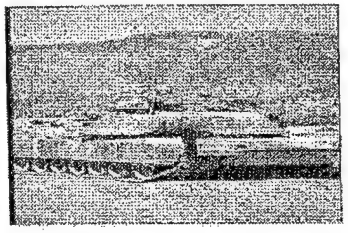
An armed force consisting
of 2.2M men and women
500K overseas
1.1M Reservists
1.1M DOD civilians

Reduced to

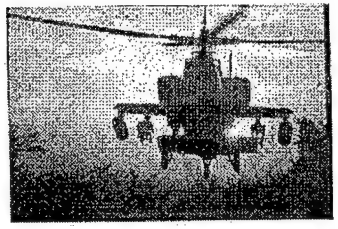
WHERE WE ARE TODAY

An armed force consisting
of 1.45M men and women
200K overseas
900K Reservists
800K DOD civilians

33% reduction in force structure



A Changing Environment



Industry and Procurement Programs

WHERE WE WERE

An industrial base where defense contractors employed 3.7M workers and procurement contracts consisted of $120B of the total DOD budget

Reduced to

WHERE WE ARE TODAY

An industrial base where defense companies employ about 2.2M workers and procurement contracts account for $44B of the total DOD budget

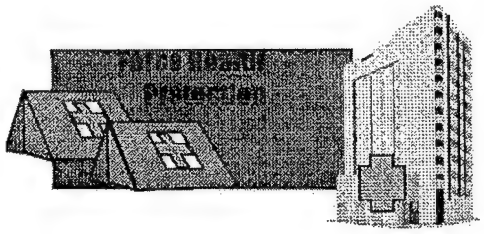
63% reduction in procurement programs

Where Are We Going?

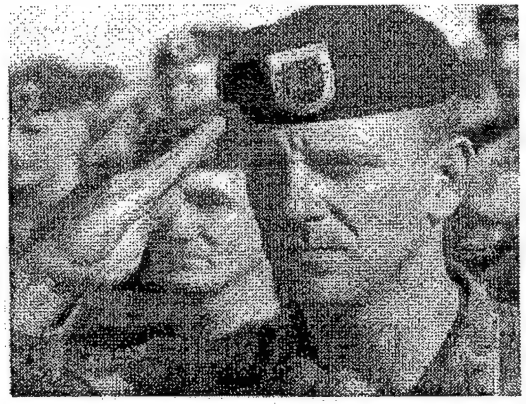
"Defense strategy must .... *shape* the strategic environment to advance US interests, maintain capability to *respond* to the full spectrum of threats, and *prepare* now for the threats and dangers of tomorrow and beyond."

The Honorable William S. Cohen
Report of the Quadrennial Defense Review
May 1997

The Challenges of Focused Logistics

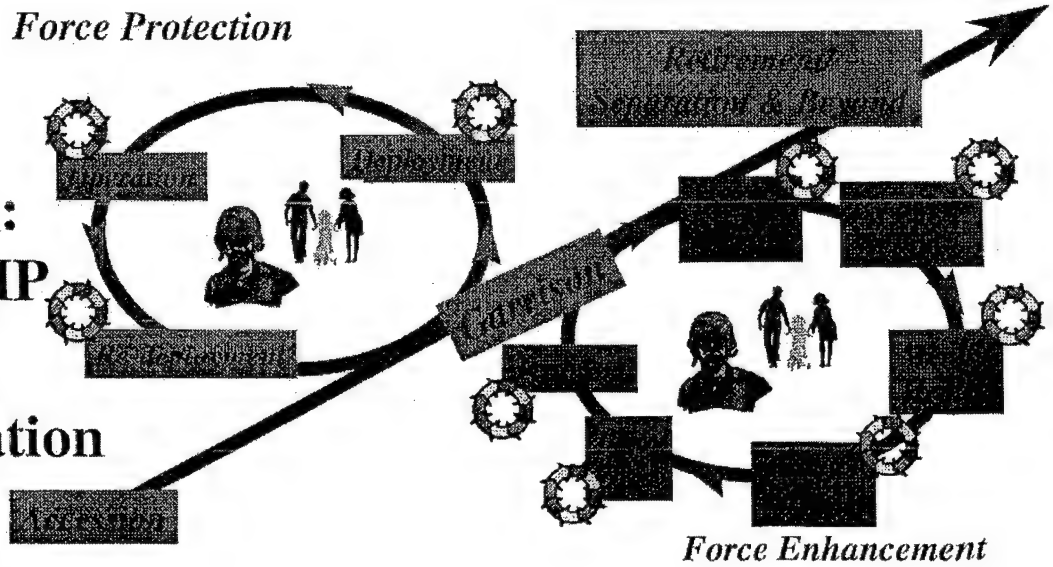


Force Health Protection

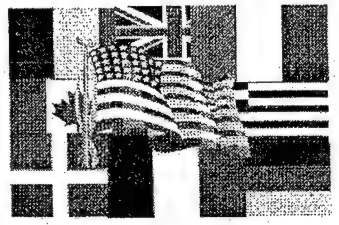


- **Strategy to protect service members from all health and environmental hazards associated with military service. Focus on healthy and fit forces, casualty prevention, and casualty care**

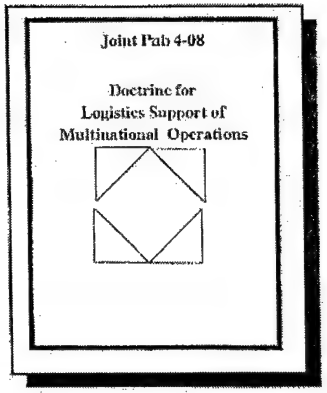
- **Road ahead:**
  - **Capstone conference: formalize Service FHP programs**
  - **Develop Communication Plans**



Multinational Logistics



...mutual logistics support relationships between the U.S. and allied/coalition partners.



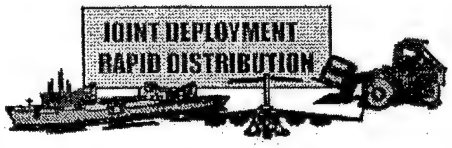
★ **Released 1st Draft of Joint Pub 4-08 (Doctrine for Logistics Support of Multinational Operations)**

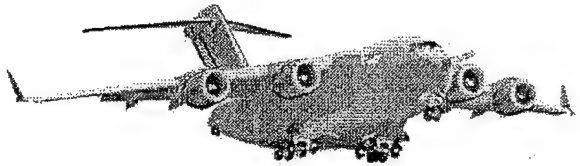
★ **Completed ACSAs with 12 Nations last 2 years (total of 34 in place)**

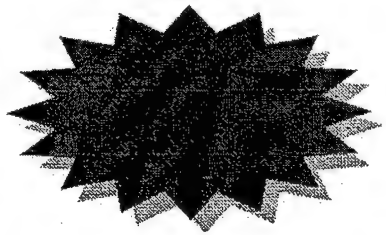
★ **Drafted a Multinational Asset Visibility concept document**

Integrate and Improve Interoperability

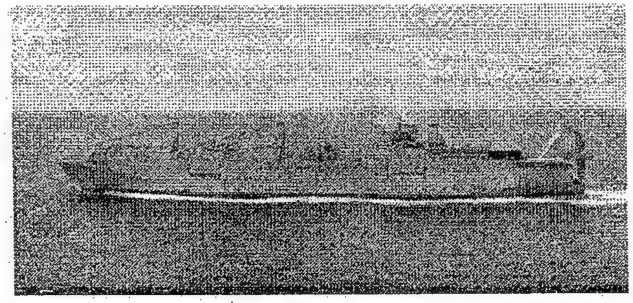
Joint Deployment & Rapid Distribution



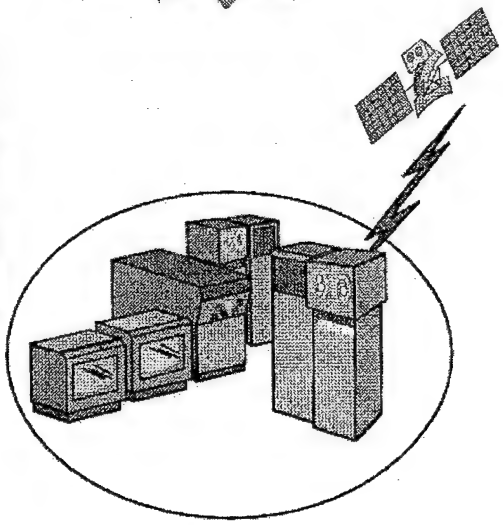




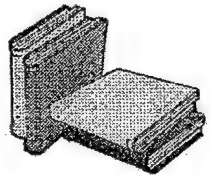
★ *Strategic Airlift*



★ *Strategic Sealift*



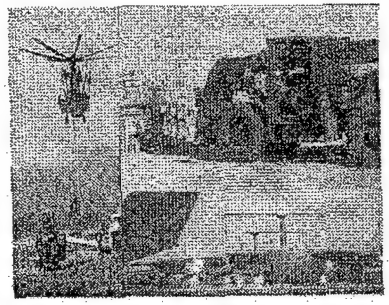
★ *Mobility Studies*



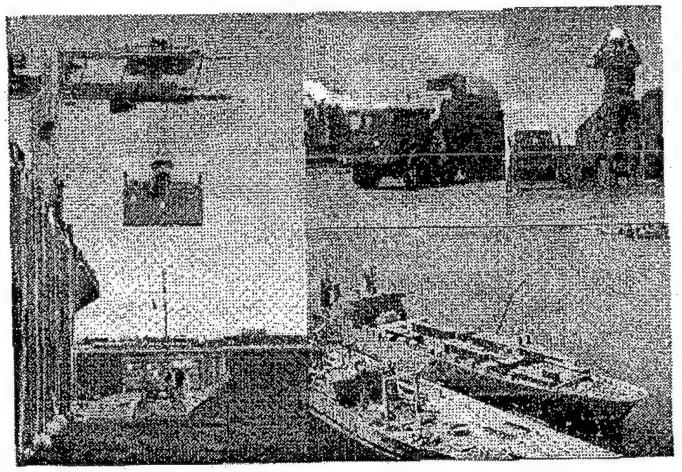
★ *Joint Deployment Process Owner Initiative*
Joint Deployment Training Center

...process of moving multi-Service forces to an operational area coupled with the accelerated delivery of logistics resources.

Theater Distribution Initiatives



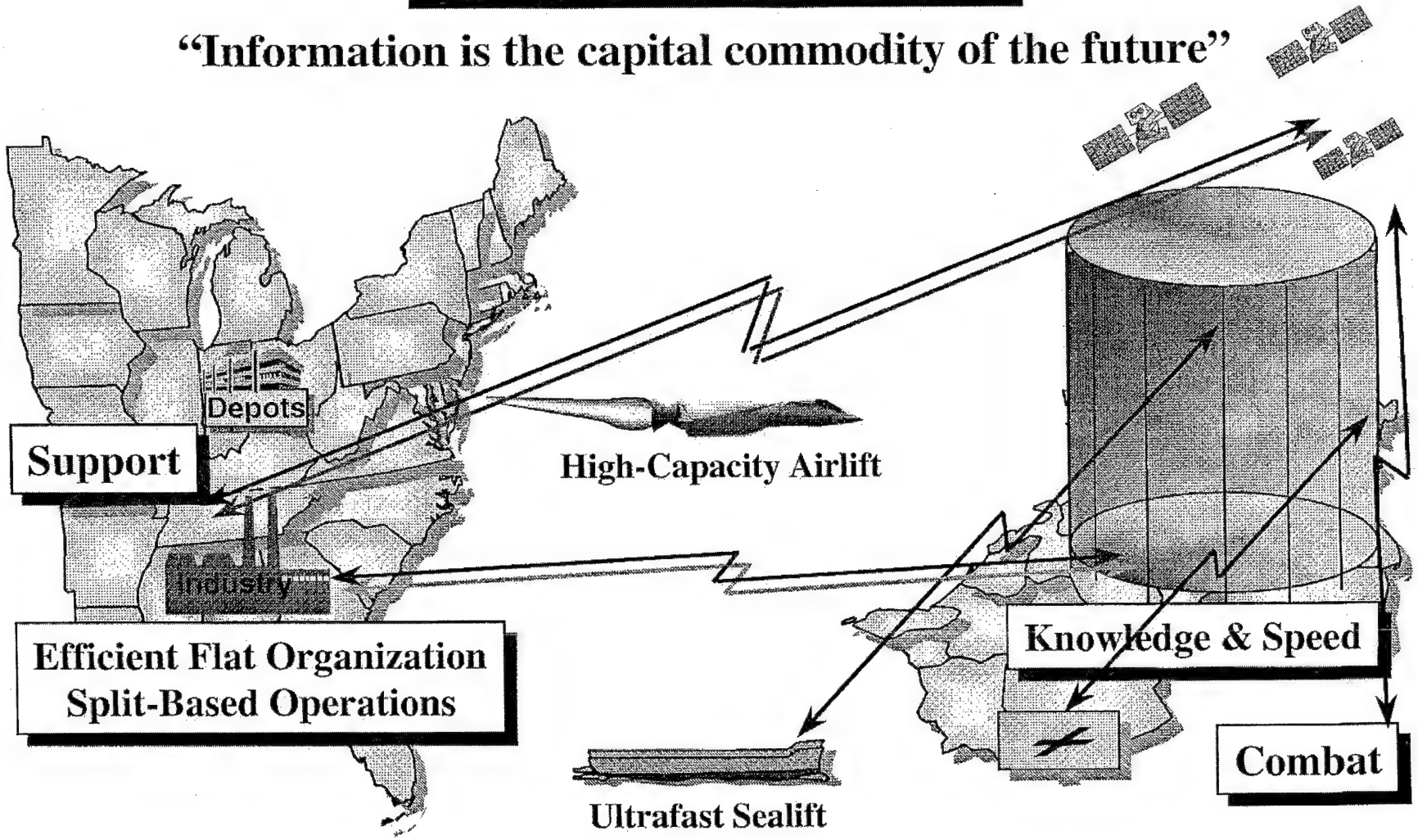
Synergy and collaborative decentralized execution required!



DJS-MA

Information Fusion

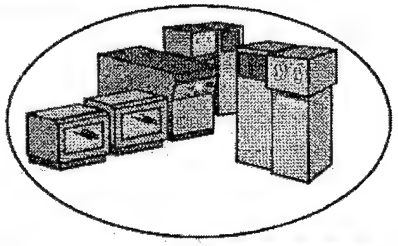
"Information is the capital commodity of the future"



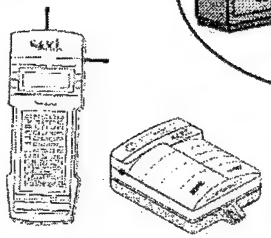
Enhance Capabilities Provided by Information Systems

★ *Track Personnel and Materiel through the Transportation System*

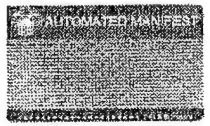
★ *Know the Contents of Containers without opening them*



Bar Codes



Radio Frequency Tag



Optical Memory Card

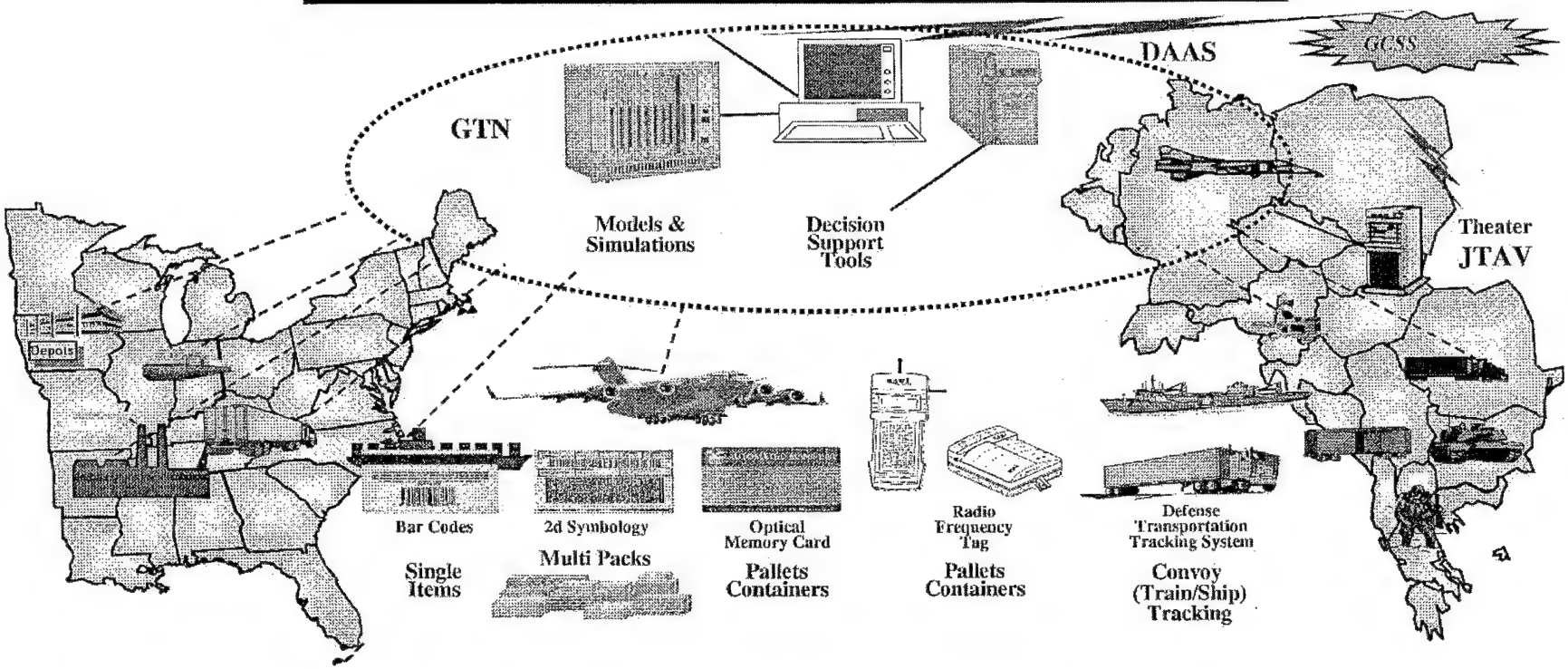
★ *Maintain Visibility over Stocks throughout the Pipeline (in transit and in storage)*

★ *Automated Tools to assist in Decision Making*

- *Situational Awareness*
- *Force Closure*
- *Analysis of Courses of Action*

★ *A Common Picture of Key Logistical and Operational Information on a Single Computer*

Automatic Identification Technology



Operational Prototype Objective:

- Determine most effective & efficient suite of AIT
- Validate and Evaluate AIT Concept of Operations
- Incorporate into DOD AIT Implementation Plan
- Define Fly-Away Kits for other CINCs

DLA is the AIT Executive Agent

CINCs, Services, and Agencies are Involved

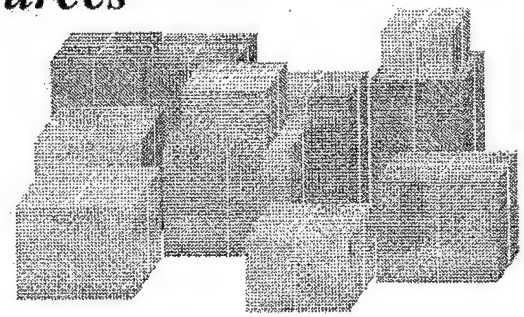
Near Term Successes

- Infrastructure In Place for Unit Move
- Have TC-AIMS II-JFRG II-JOPES Interface
- Created Business Process Server

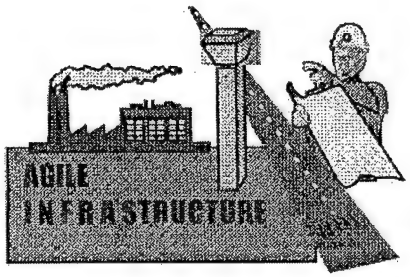
Joint Theater Logistics Management

...a concept to synchronize theater logistics functions to achieve efficiencies

* *"Fusion Point" Between Strategic and Tactical Logistics*
  - *Consolidate Like-functions to Achieve Efficiencies*
  - *Prioritize Distribution/Use of Limited Resources*
  - *Efficiently Task Common User Assets*

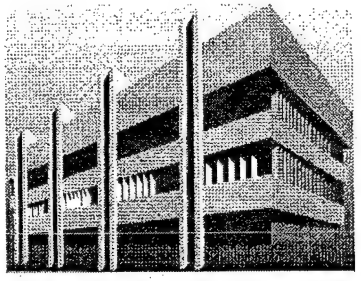


* *Implementation Actions*
  - *Incorporate into Joint Doctrine - April 99*
  - *Integration into OPLANS, CONPLANS and Functional Plans as part of the 1998 JSCAP Deliberate Planning Process - October 00*



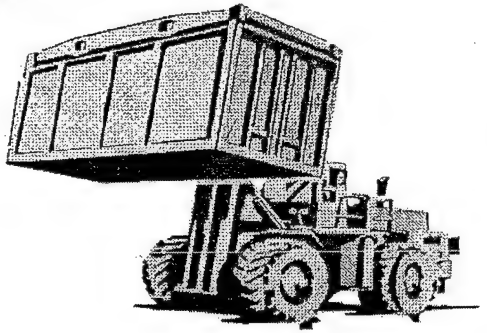
Agile Infrastructure

...right-sizing the logistics footprint (forces, airfields, ports, equipment and supplies), while improving effectiveness of support.



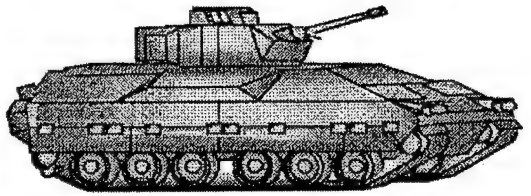
★ *Strategic Enroute Infrastructure*
Ports and Airfields shortfalls being identified

★ *Virtual Prime Vendor Contracting being expanded*



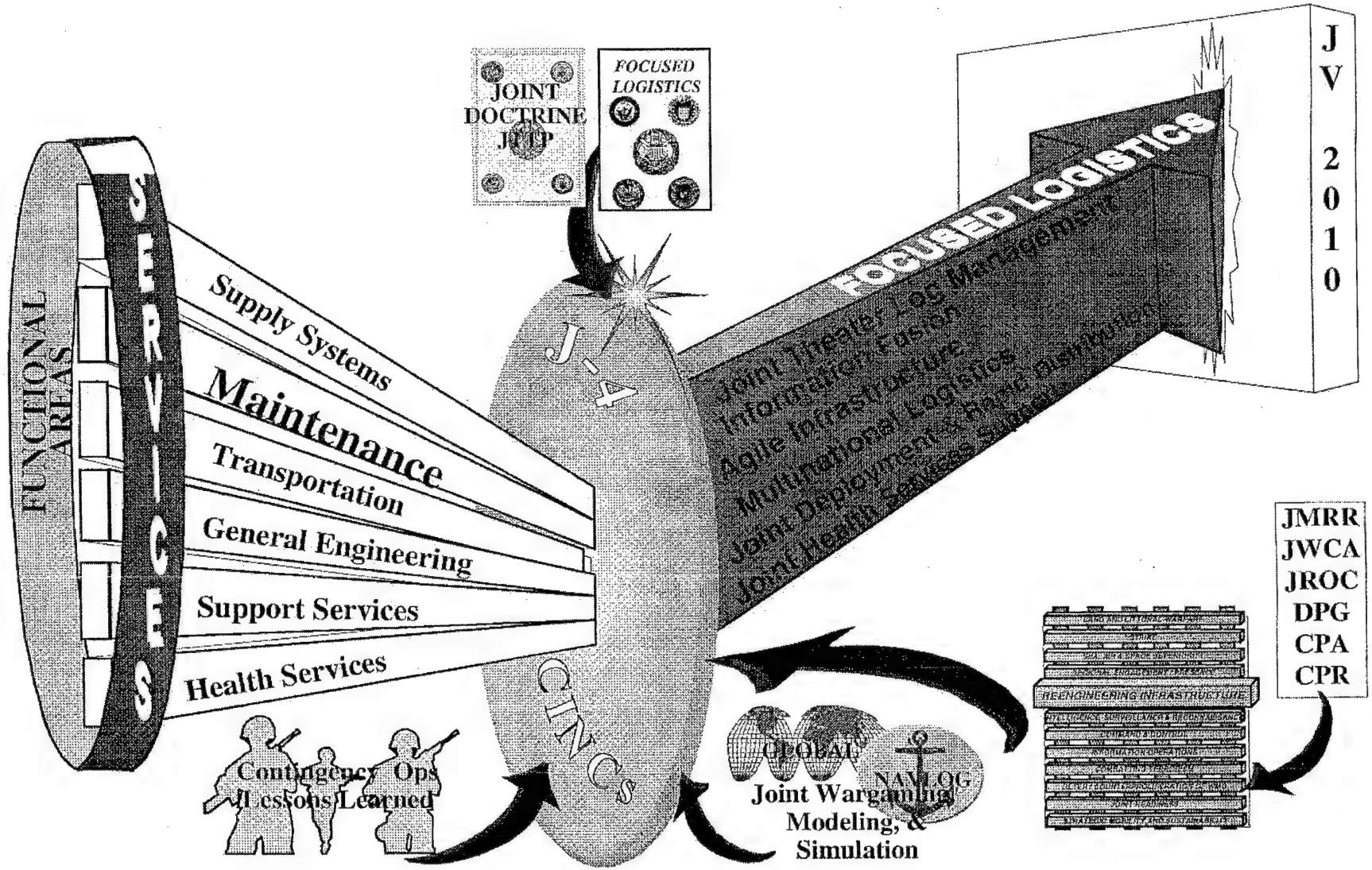
★ *Wholesale / Intermediate supply inventories reduced by $8B in 2 years*

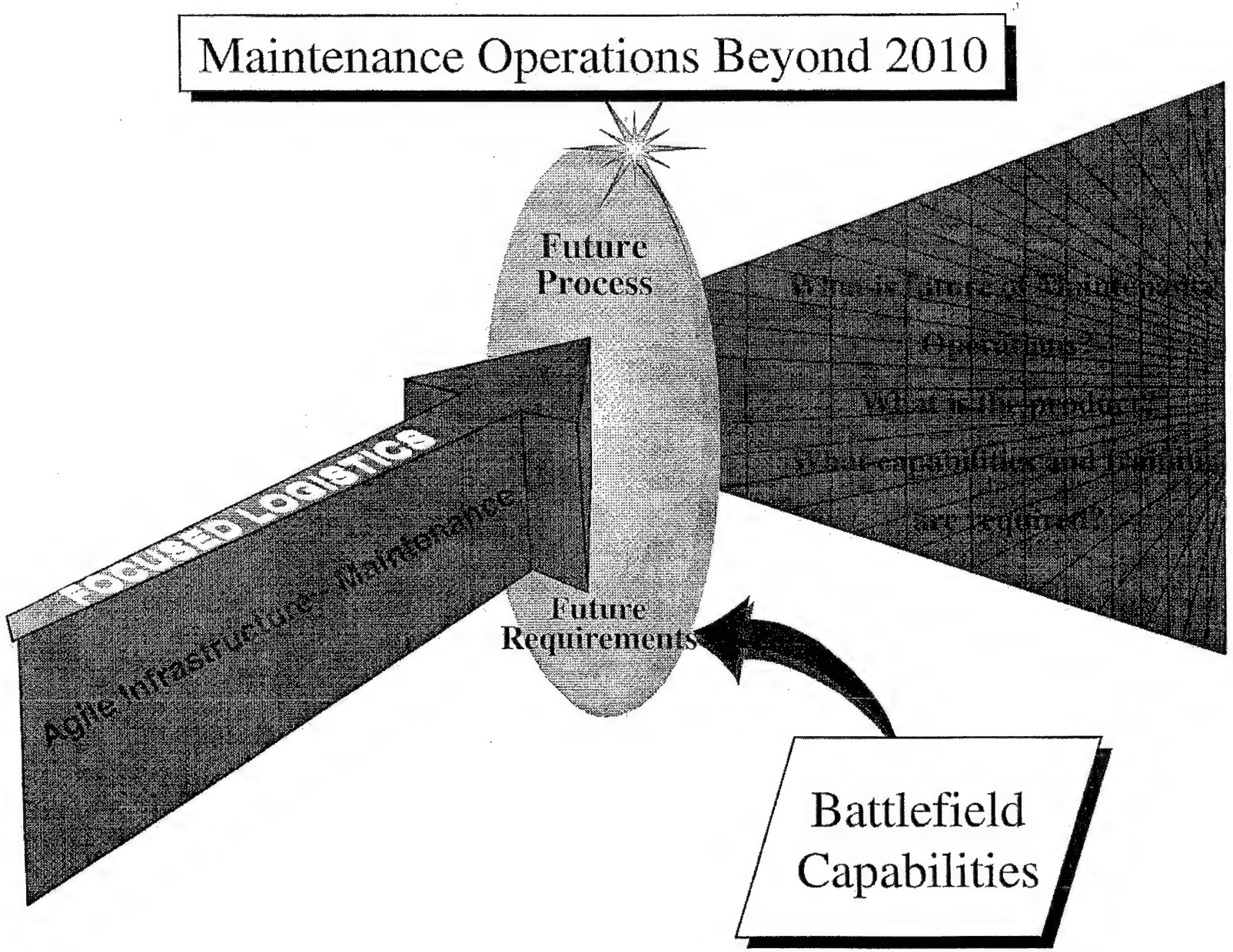
★ *Competitive Sourcing*



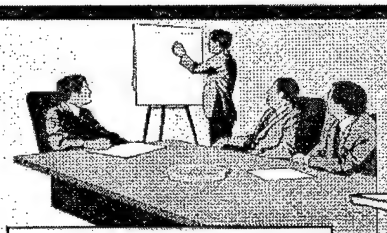
★ *Wholesale logistics response times decreased by 7 days in past 2 years*

Focused Logistics




Maintenance Operations Beyond 2010
Future Process
Future Requirements
Battlefield Capabilities

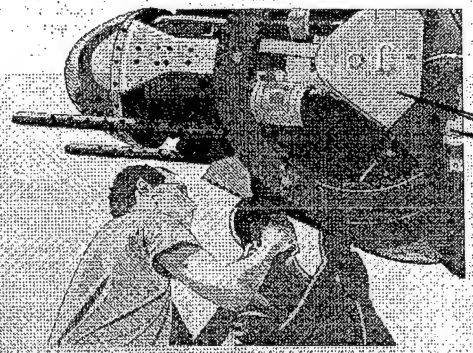
MAINTENANCE CONCEPT

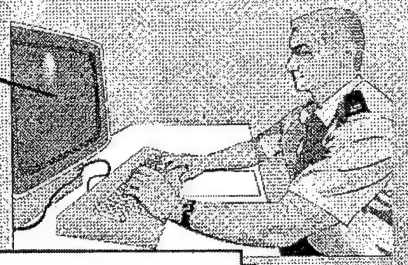


CLASSROOM

Enhanced Partnership with Industry

Train to Skills not Tasks

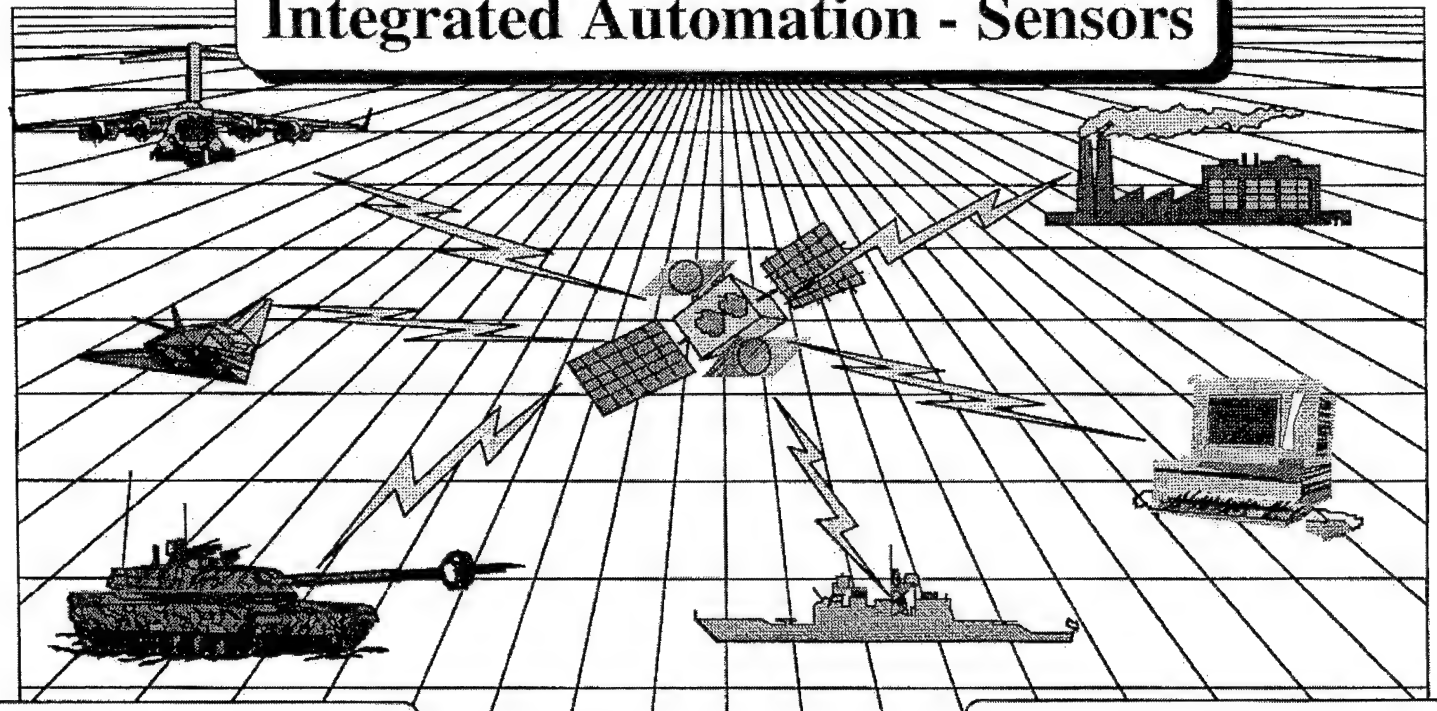




Enhanced Tele-Maintenance Capabilities

MAINTENANCE ENABLERS

Prognostics - Diagnostics
Integrated Automation - Sensors

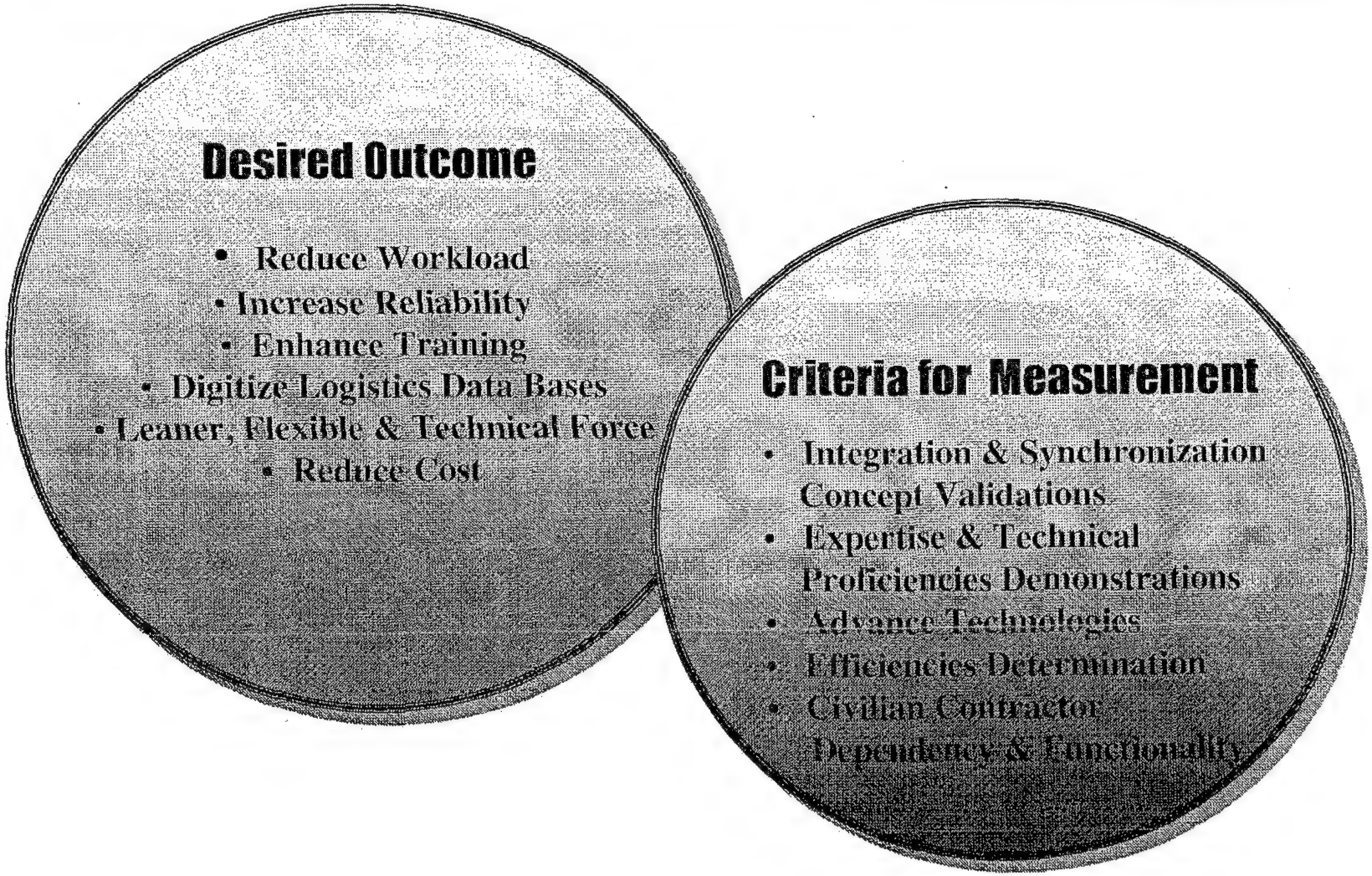


Systems that transmit and receive real time data

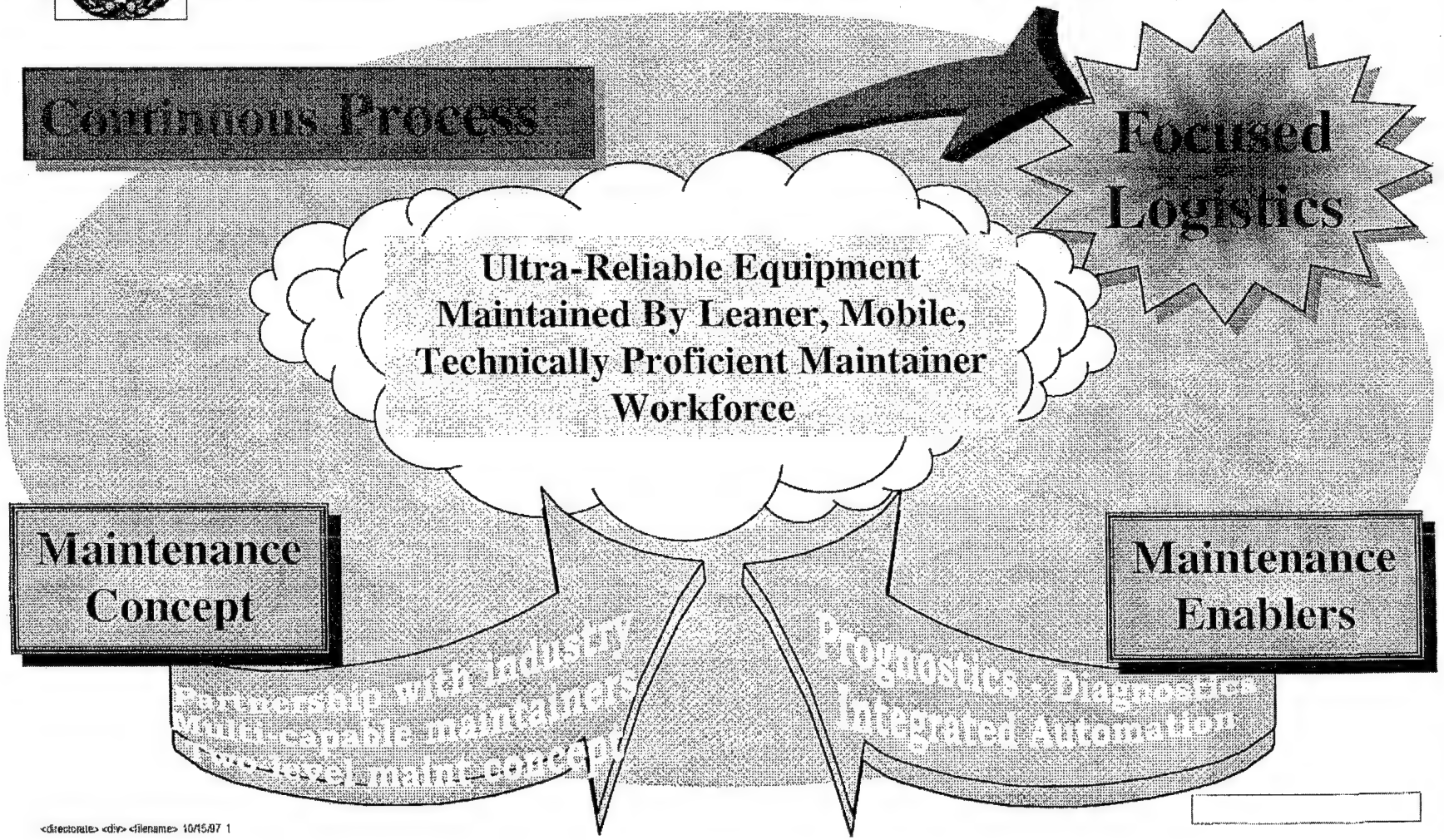
Systems that store transmit and receive

Systems that store and provide data when interrogated

Focused Logistics - Maintenance Operations



How Do We Get There?



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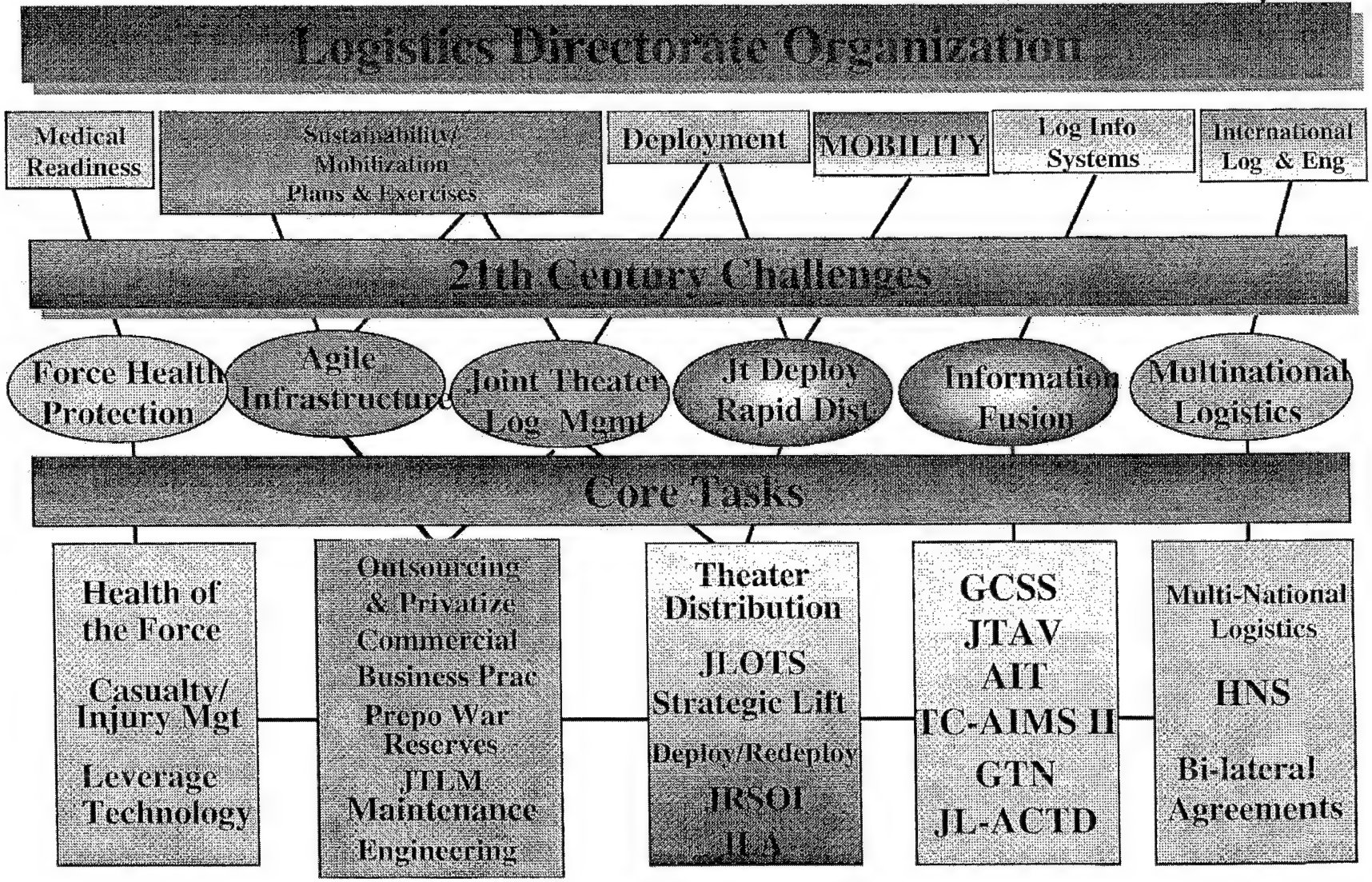
Institutionalizing Focused Logistics

JV 2010



Reducing Logistics Response Times

DoD Maintenance Symposium

October 19, 1998

Objective

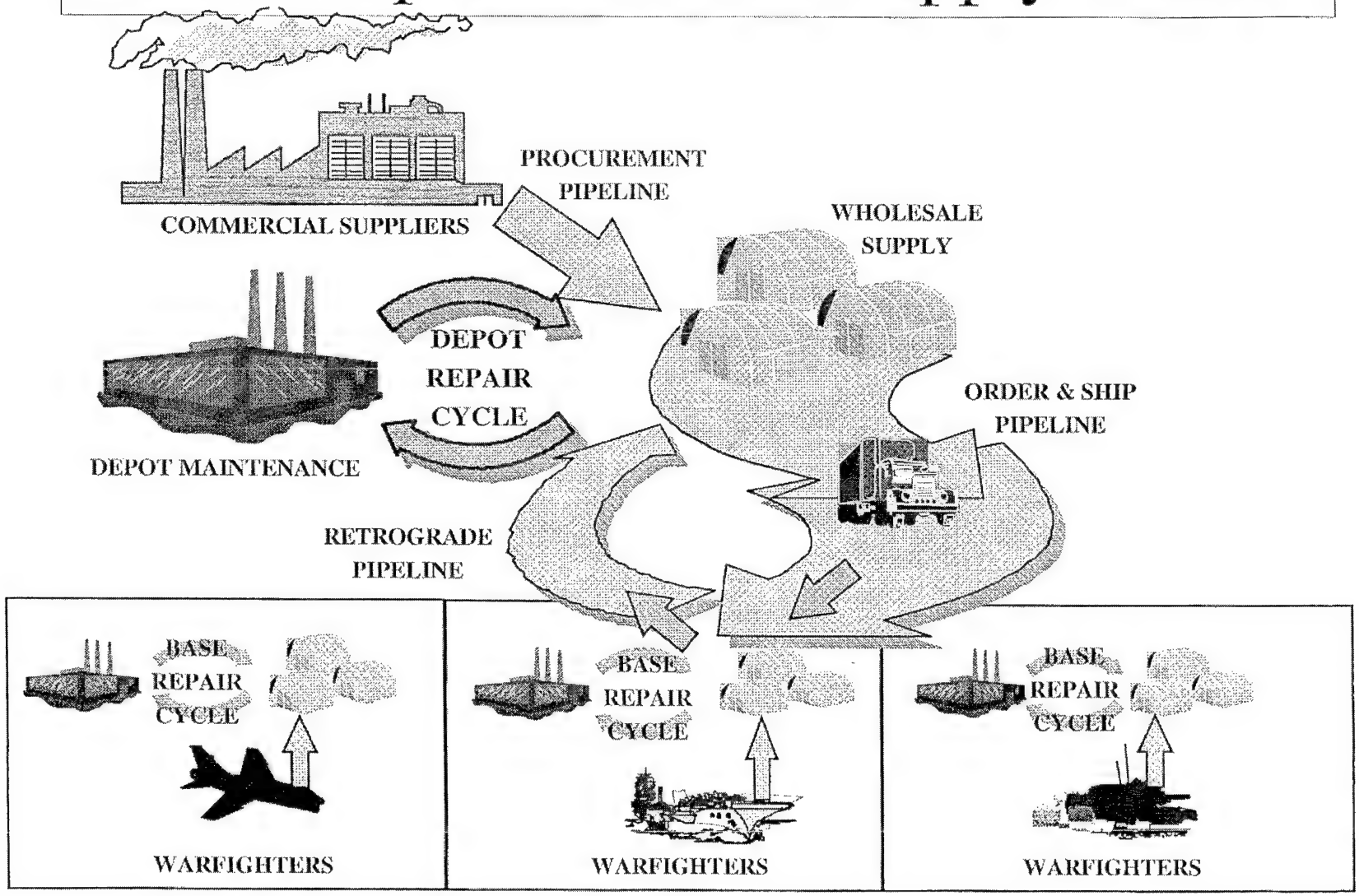
Repair the **right** quantity

of the **right** item

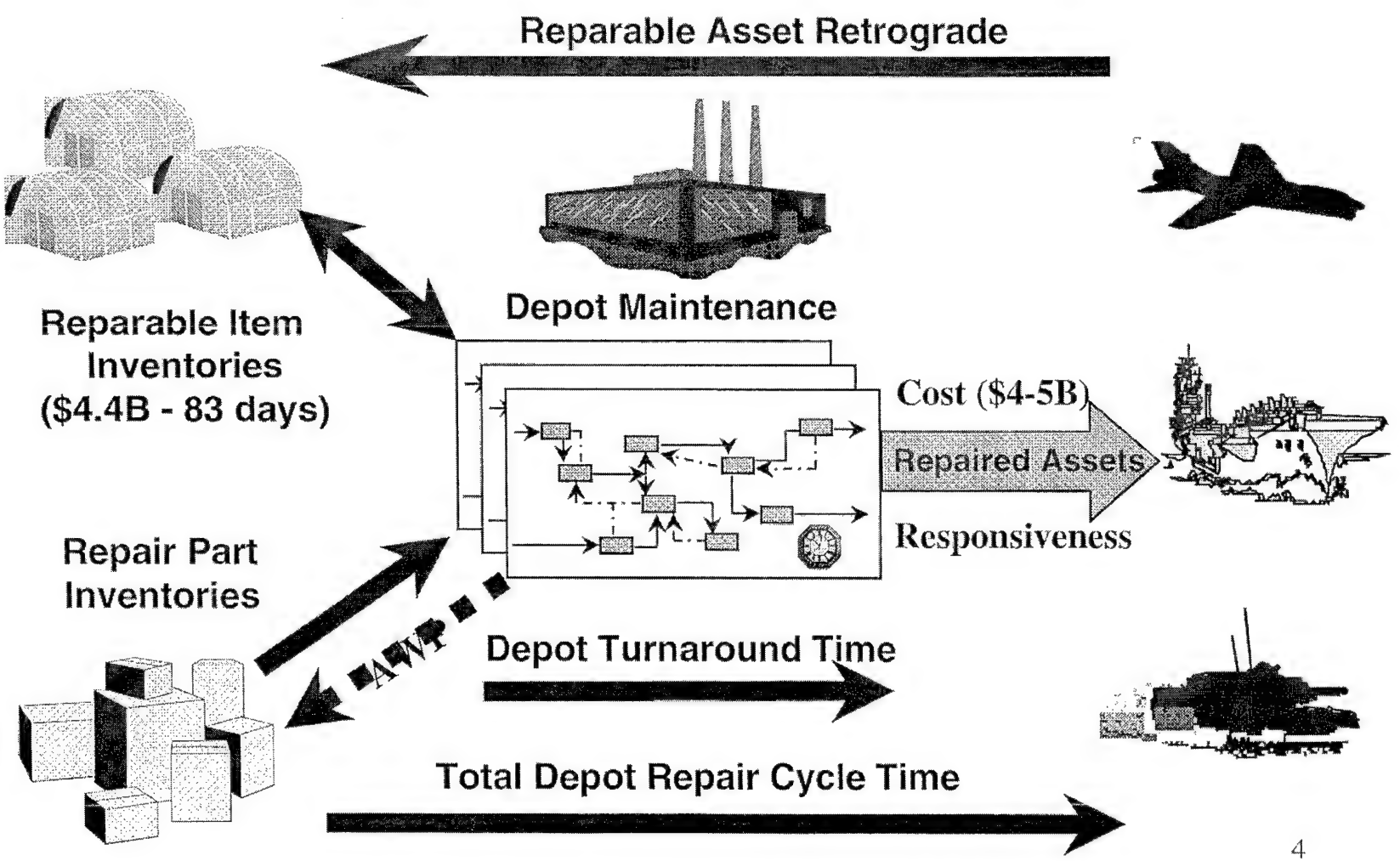
at the **right** time

for the **right** price!

DoD Reparable Asset Supply Chain

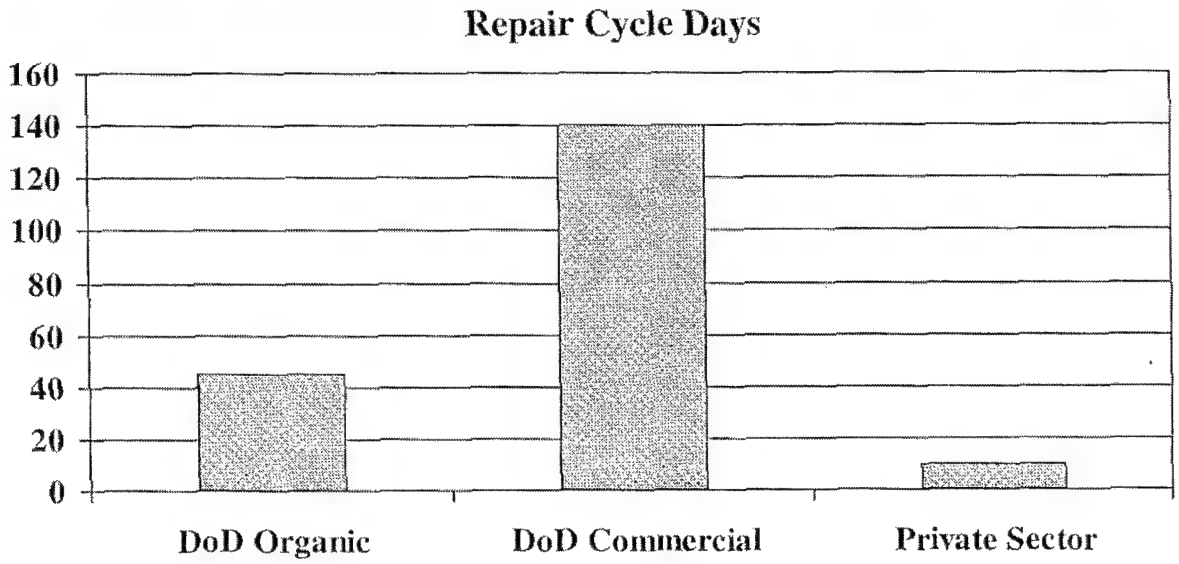


Depot Repair Cycle

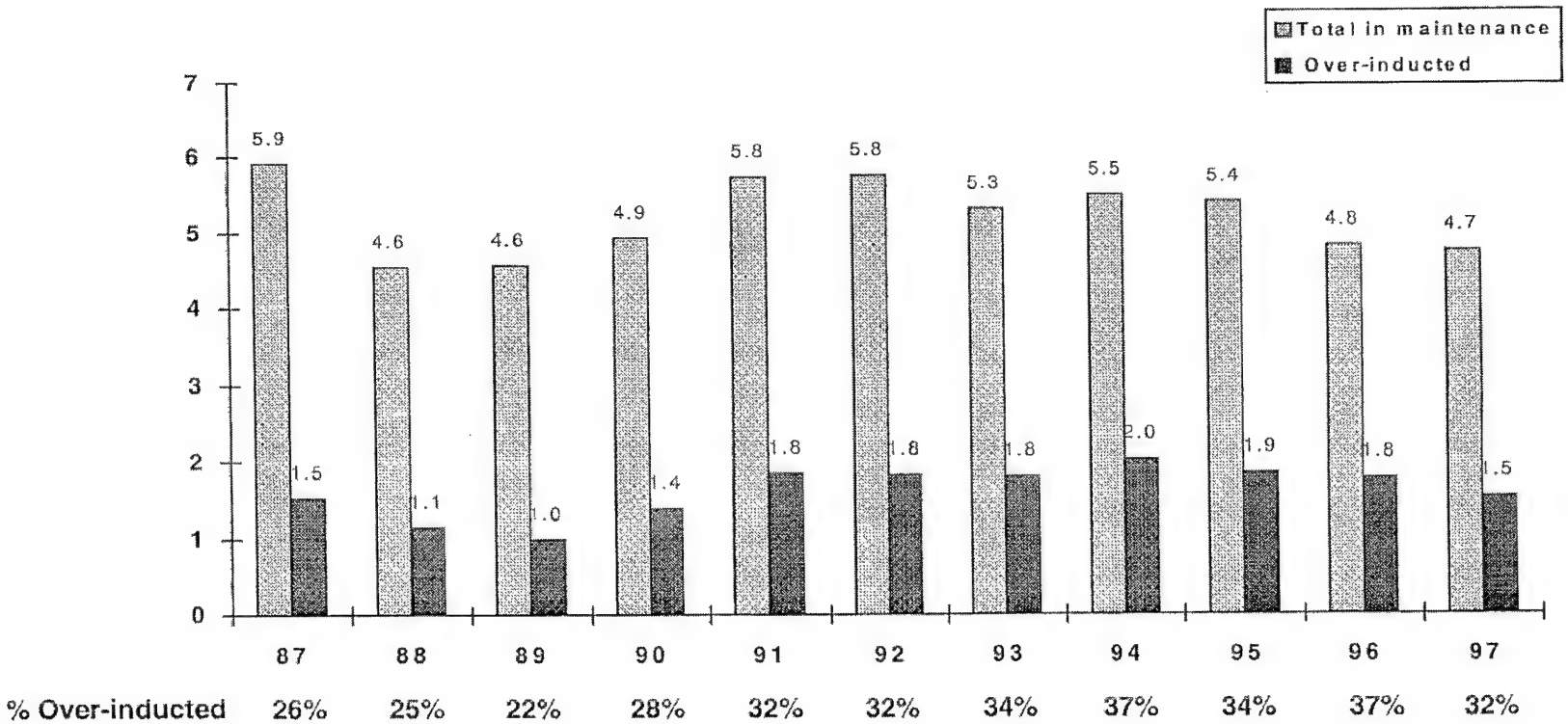


Nominal Depot Repair Cycle Metrics
DoD Vs Private Sector

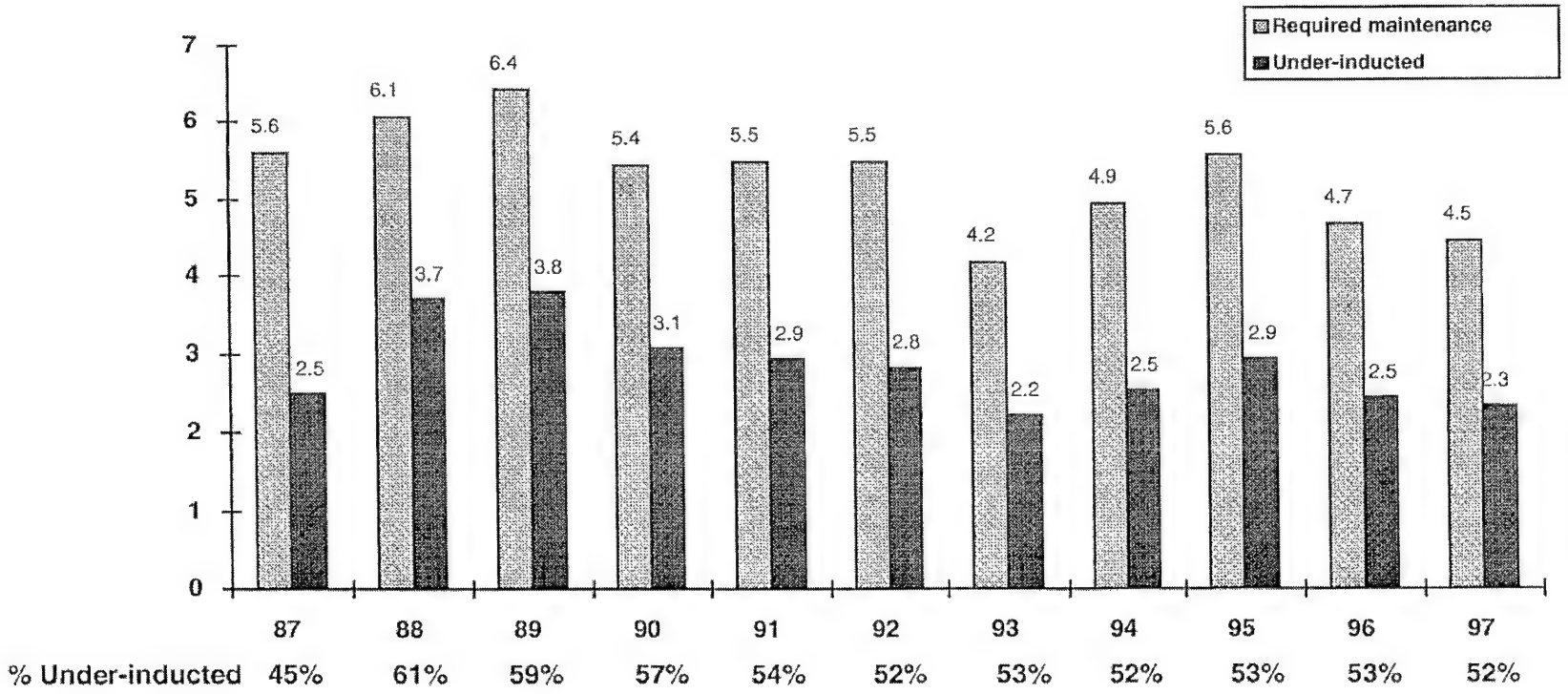
Characteristic	DoD	Private Sector
Induction Quantities	>5	≤5
Schedule Timeframes	Quarterly - Annually	Weekly
AWP Percent	10 - 20	Under 1
Parts Support to Maintenance Percent	65 - 70	90 - 95
Inventory Levels - Parts (months)	1.5	2-3



DoD-Wide Depot Repair Over-Inductions



DoD-Wide Depot Repair Under-Inductions



Panel Perspectives

- RADM(s) Steve Heilman (NAVAIRSYSCOM): Naval Aviation Depot implementation of Manufacturing Resources Planning (MRP II) using commercial off-the-shelf software.

- CAPT Jim DeLorenzo (NAVICP): Proposed Logistics Information Superiority Experiment (LOG ISX) regarding integrated supply chain management of reparable assets.

- Mr. Tom Caudill (AFMC): Air Force depot repair enhancement program (DREP) and repair on demand.

- Mr. Brian Lewis (Marconi): DoD contractor experience with improving depot process times and supply chain management.

"The Future of Defense Maintenance & Support"

2nd Annual DoD Maintenance Symposium

James C. Restelli
Vice President and General Manager, Aerospace Support
The Boeing Company

October 19, 1998

Good morning, ladies and gentlemen. I'm delighted to be here with you this morning.

As you know, the theme of this conference is "Maintenance: Today's Challenges...Tomorrow's Vision" Discussing the topics of vision and future, much less the future of a complex subject such as defense maintenance, is obviously influenced by our individual experiences and views. Nonetheless, we in industry and government...even the leaders of this country and the world as a whole...must confront tomorrow's challenges today, and make the changes which will decide our future, in this case, the future of maintenance and logistics support.

As a matter of coincidence, a few weeks ago I had the opportunity to be part the second-annual Logistics Reform Day at the Pentagon. The forum was a roundtable discussion with the DoD's senior logistics commanders. The theme of the roundtable discussion in the Pentagon was "Seamless Support for the 21st Century Warfighter." It is clear, that roundtable theme and the topics on this conference agenda are totally aligned.

Those of us who participated in the Pentagon roundtable were, as we said, in "violent agreement" that we, who are in the business of providing products and services supporting the defense needs of this country, have one mission:

To assure we provide to the warfighters who depend on us everything they need, when they need it, to enable them to successfully accomplish their mission.

I hope all of you here today are equally in "violent agreement" that that is our mission!

As you know better than I, effective, efficient maintenance modification and modernization are key elements of an integrated approach to support the defense needs of this country and those of our allies. Addressing the issues of cycle time, quality and affordability are essential to supporting the warfighters' mission.

The future of logistics support must be addressed in the context of *reducing customer cost of ownership*, and that must be the focus of this conference. I'd like to spend some time this morning giving you my views on how we achieve that future and what I believe we need to do to get there.

Let me frame my comments in the context of a management process many industry and government leaders use to chart a course for organizational change and growth. There are three major tenets:

- First, we must understand and define our current state;
- Then, we should project the attributes of our desired future state;
- And finally, we must define the key actions and strategies necessary to fill in the gaps to achieve our future state.

Let me start by offering my views of the current state of logistics support. The industry and government infrastructures engaged in providing maintenance and logistics support today have developed over the last 75 to 80 years. If we look back at history over those decades and the changes related to aircraft maintenance, repair and overhaul, we are provided some insight as to where we find ourselves today.

Early pilots not only in many cases built and flew, but, as well maintained, repaired and supported their own aircraft, even if it meant sleeping under the wings. With the advent of commercial air travel and more rigorous operational schedules, airlines established logistics support and maintenance capabilities as a stand-alone function.

Then came World War II. At first, the military was desperate for all the help they could get in supporting their rapidly growing defense fleets. They invited…in reality they commandeered…the support services of the private sector to maintain military fleets.

Later on, the military services began to worry that private contractors, in returning to civilian pursuits, would abandon the business of support and maintenance. As a result, the military began to establish infrastructures of their own, both inside and outside the United States.

To some extent, the concern of the military services regarding support by the private sector of defense products is well founded. Internal to our industry, our infrastructure was, and in many cases still is, focused on providing weapon systems and component product sales, not the business of providing logistics support of those products as a *business*!

In my view, the current state is manifest in a number of different attributes endemic to our industry:

- Support of products has been viewed by some as a "cost of doing business," rather than an essential, required and profitable business opportunity;
- Organizational infrastructures exist that are disproportionate to the level of support they are required to serve;
- Support organizations are largely transaction focused;
- Clearly many redundancies remain in competencies between the customer and the supplier…public and private;
- In many ways, the result of these attributes are large stocks of spare parts and supply inventories sitting in multiple warehouses with slow inventory turns and long lead times for delivery; and finally,
- As often is the case, the parts needed are not the parts readily available in the warehouse or the supply system!

I firmly believe a clear focus on our common support mission – putting in the hands of the warfighters everything they need, when they need it – will bring all of us in both the public and private sectors to the second stage of my management process, that is our desired future state. Here is what that means to me. The future state will be founded on attributes such as:

- Largely commercially based support systems and infrastructures that allow the cost efficiencies inherent in peacetime to be flexibly deployed to support rapid transition and surge capability when our warfighters are called upon;
- Prime contractors partnered with their military customers as well as preeminent suppliers with complimentary, integrated competencies;
- Fewer, more preeminent suppliers who are willing to invest the brainpower and resources on behalf of the support mission to be preeminent in their competency;
- Paperless, electronic supply systems that take advantage of the seemingly unlimited electronic infrastructures that enable boundless communication;
- Support requirements dependably delivered anywhere in the world in an extraordinarily fast system, just like FedEx and UPS do today.
- Concepts such as prime vendor support, flexible sustainment, supply chain management, and trigger-based item management deployed in support of all essential military products;
- A streamlined acquisition process institutionalized that has a fundamental bias for ease and speed.
- A cultural change evident within industry such that innovative business-based solutions to customer support needs exist to the same extent innovation is focused on cost-effective development of complex weapon systems.

- And lastly, and perhaps the result of those preceding elements being brought to bear, future logistics support budget levels that are lowered and thereby evidence we have in fact reduced the customer's cost of ownership.

Progress is being made. Events like this one show that our industry and our customers recognize change is essential to reducing cost of ownership. But if we look honestly, it's clear significant gaps remain in where we are today and were we need to be.

Again, following my management process approach, let me present five thoughts as to how we might close these gaps.

First, culturally, both the DoD and industry must recognize we need to be in this together. Public/private partnerships are powerful tools. They allow both sides to better understand each other through closer communication, and they allow innate competencies on both sides to be captured so public and private organizations become complementary rather than redundant.

When Boeing formed a partnership with Ogden Air Logistics Center earlier this year to compete for the McClellan workload, there were a good number of people who were skeptical on the eventual outcome. Could a public/private team come together in a relatively short period of time to first, collectively produce a winning proposal for the competition, and then put the planning in place to execute effectively?

In the process of doing that, we learned a lot about each other, found ways to capitalize on our unique capabilities, and came up with a solution that offered the Air Force real cost and effectiveness benefits. In fact, the Air Force estimates taxpayers will save $638 million over the nine-year span of the contact. That's a 30 percent reduction in the customer cost of ownership!

As an aside, I will note the team at Ogden found out how hard it is to compete and how complex and incredibly laborious are the requirements of the government acquisition processes. That insight alone may have been a worthwhile reason for our partnership.

Secondly, we need to continue to eliminate redundancies. On both the DoD and industry sides, we need to find the overlaps and make rational decisions on where the competencies should reside. This should be based on a simple criteria...the competencies should reside with the provider who is committed to preeminence in that competency, and is committed to investing the brain power and resources necessary given the core military need! Second best isn't good enough!

This redundancy issue is one that applies to both the public *and* private sector. As an example, as a prime system contractor, we at Boeing have traditionally had design teams overseeing suppliers in the detailed design of their systems. It baffles me as to why we believe we have to know as much about component design as the supplier providing the system. We are now dealing with those redundancies and we are in the process of collapsing to those staffs that support value-added requirements.

Our infrastructures, which remain today, in some cases, result from a question of trust or confidence between the parties and a willingness to "let go." We need stronger, slimmer, more efficient and responsive organizations focused on value-added benefit, not oversight for oversight's sake.

We need to sort out our roles and missions. Our suppliers should be fewer, but preeminent in what they do. In true partnership fashion, we must work together to deliver the promised end product to the customer, with the quality and at the cost we promised.

Through our preferred supplier program at Boeing, we've been able to reduce our number of suppliers by about 50 percent by partnering with preeminent companies, both large and small, with the specific competencies our customers require. As well, we have seen a reduction in cost to our customers of approximately 6 percent per year in real terms over the last four years as a result of focusing on improvements with suppliers, rather than investing our resources maintaining poor performers.

Third, we need to focus on systems, processes, skills and cost infrastructures aligned to the business needs of supporting products and services, rather than maintaining those which are primarily focused on defining and producing weapons systems and components.

If we use the right tools, systems, skilled people, processes and cost infrastructures, we in industry have seen incredible cycle time and cost improvements. In our Boeing structural repair business, for example, we assigned a dedicated team with dedicated tools and processes, and a rate structure tailored to the "business" of repairing and modifying aircraft structural flight control surfaces.

With this new business focus on an area that was once viewed as a necessary but generally undesired customer-support activity...not a business...we have seen turnaround times slashed by a factor of five and repair costs reduced by more than 60 percent. We are looking to expand our product repair competency to other products, including non-defense opportunities.

Fourth, we need to recognize that consolidating, reducing and even closing operations, including those resulting from the BRAC process, doesn't need to be the end of the world.

Today a substantial business is being built in Texas in a former Air Force facility. Our Boeing Aerospace Support Center at Kelly Air Force Base is succeeding because it was built on a strong business plan and makes good business sense. We have taken a tremendous facility with a skilled work force, and by applying many tailored, commercial processes, we are creating a low-cost, quick-response, top-quality maintenance and modification center for large, missionized aircraft.

That facility is dedicated to preeminence and we have taken the actions required to institutionalize that capability. C-17s, KC-10s, KC-135s and even MD-10 passenger-to-freighter conversions will all benefit from that preeminence! The revitalization of Kelly is an on-going success story that provides a future for thousands of people who only several months ago believed they had no future.

In turn, it's important to recognize that some facilities need to be closed down, both public and private. We cannot continue to shelter ourselves from making hard decisions with the hope that the future will somehow rationalize today's infrastructure. I believe in that context, the future is today.

Fifth and finally, we have to address some fundamental issues in the acquisition and contracting processes. While we strive toward commercial practices and contracting, it clearly is not as innovative as it should be.

Let me draw a contrast. Through a joint venture between Boeing and GKN Westland Helicopters, the United Kingdom Ministry of Defense is acquiring a helicopter training capability for its Apache helicopters. The joint venture, known as Aviation Training International Limited, is using private financing to develop the training systems and facilities.

The training services are being provided to the MOD under a commercial business arrangement based on a pay-for-services concept, which includes a 20-year guaranteed student throughput from MoD. We as the training provider warrant the quality of the student to perform the required mission.

That type of contracting is difficult in the United States because of acquisition regulations and the inability of the services to make long-term commitments. This needs to change if the benefits of commercial contracting are to be made available to defense contracting.

That having been said, we must also recognize that commercial practices are not always the right solution. While they allow more flexibility, and may have the perception of being faster, better and cheaper, commercial practices at times are not totally structured for meeting defense needs. It is hard for industry to warrant the outcome of battle, unlike commercial airline reliability. So we need to carefully tailor commercial approaches to military needs.

In closing, let me summarize what I believe are the keys to achieving our future state:

Both industry and the public sector must be prepared to go out of some businesses as we reduce redundancies and focus on preeminent competencies.

We need to institutionalize the mechanisms that make possible rational public/private partnerships enabling the easy exchange of work in both directions to take advantage of preeminent competencies on both sides.

And lastly, we need to take the message to Congress that doing business in these new ways is absolutely required. There must be a balance between maximizing efficiencies and reducing logistics support costs, and the political objective of retaining jobs.

Is change underway? Yes, I think we all see it. We have a long way to go, and the gaps are deep in places. But I'm confident that if we first have a clear focus on those changes that result in better, faster, cheaper preeminent maintenance and logistics support…and second, have the resolve to make the hard decisions required to drive those changes, we will deal with today's challenges *and* move to a future state of logistics support founded on industry and government partnerships, which provide timely, cost-effective "seamless" support, thereby enabling fully mission-capable warfighters in the 21st century.

That must be the mission we collectively undertake here today!

Thanks very much for listening. I've enjoyed being here with you this morning.

PACFLT REGIONAL MAINTENANCE

RADM TAYLOR

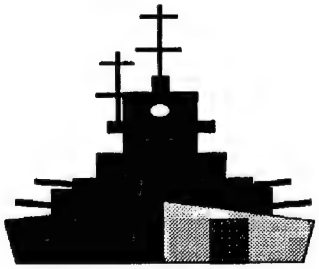
FLEET MAINTENANCE OFFICER

DOD LOGISTICS CONFERENCE

OCTOBER 1998

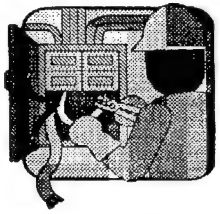
ORGANIZATIONAL

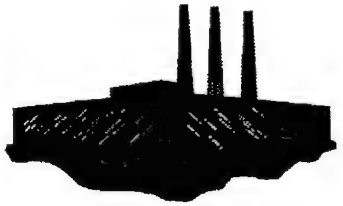
(SHIP CREW)



INTERMEDIATE

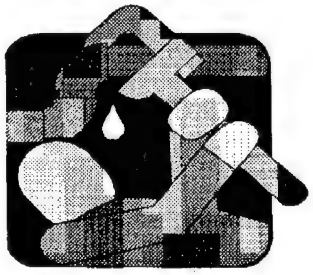
(PRIMARILY SAILORS)

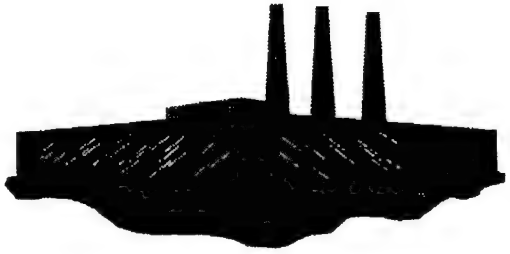




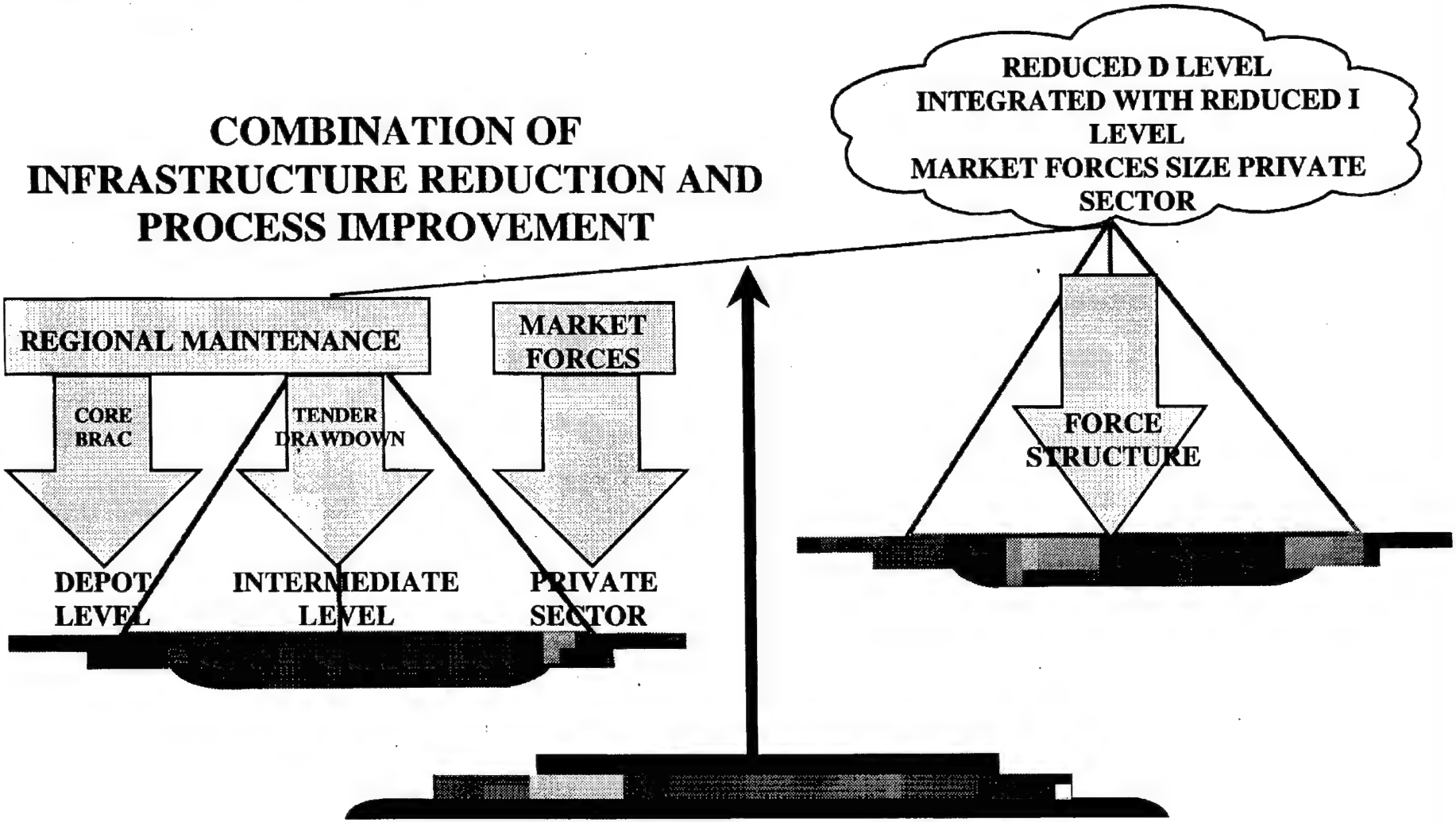
DEPOT

(CIVILIAN ARTESANS)





COMBINATION OF INFRASTRUCTURE REDUCTION AND PROCESS IMPROVEMENT



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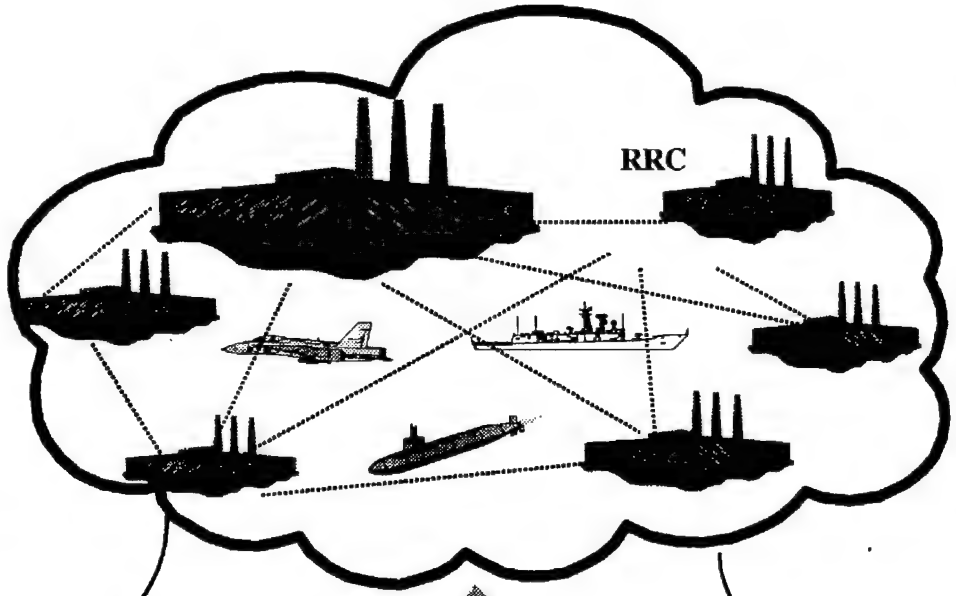
SYSCOMs

Technical oversight/authority remains with the SYSCOMs

National prebrokered workload determination remains with SYSCOMs

Maintenance Plan maintained by SYSCOMs



FLEETs

Fleet maintenance to be conducted using an integrated maintenance process

Common data foundation between Fleets with common business and support processes

AVIATION I & D LEVELS

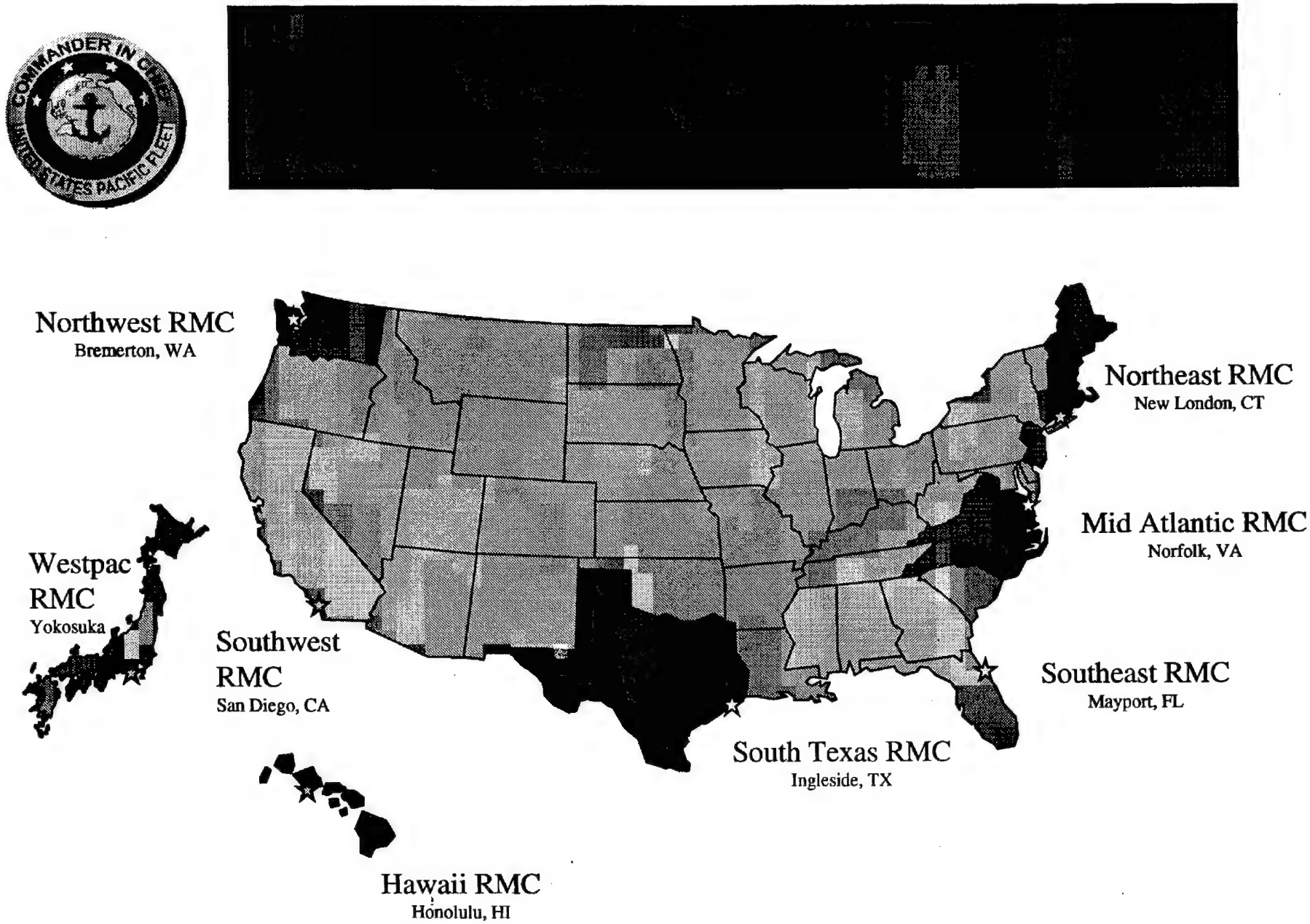
SHIP I & D LEVELS

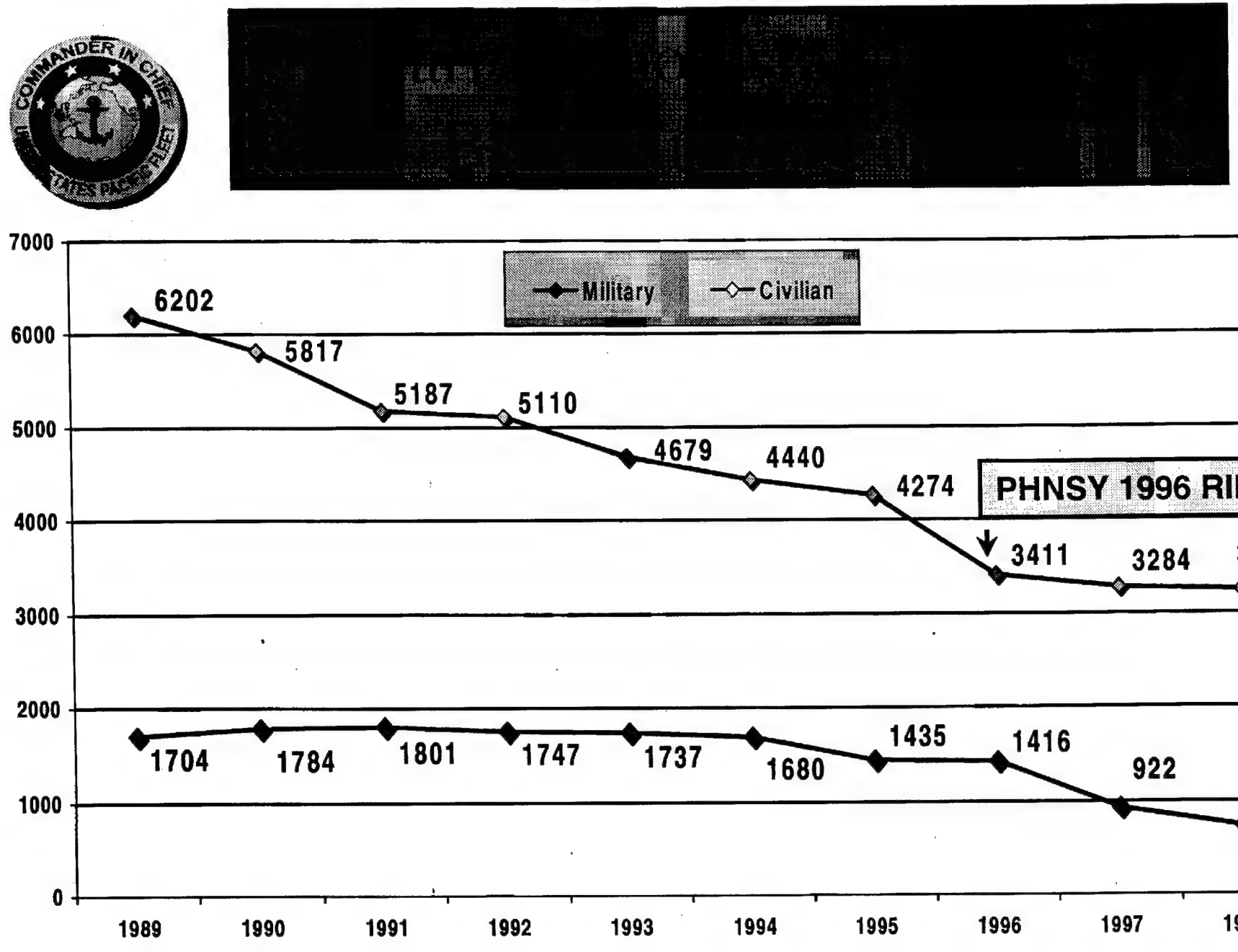
I & D, I & I INTEGRATION/ CO-LOCATION CAPABILITIES

AIMD

SIMA

STOVE PIPES OF I AND D LEVEL MAINTENANCE ACTIVITIES


COMMANDER IN CHIEF
UNITED STATES PACIFIC FLEET
Northwest RMC
Bremerton, WA
Northeast RMC
New London, CT
Mid Atlantic RMC
Norfolk, VA
Westpac RMC
Yokosuka
Southwest RMC
San Diego, CA
Southeast RMC
Mayport, FL
South Texas RMC
Ingleside, TX
Hawaii RMC
Honolulu, HI


Military
Civilian
7000
6000
5000
4000
3000
2000
1000
0
6202
5817
5187
5110
4679
4440
4274
3411
3284
3241
1704
1784
1801
1747
1737
1680
1435
1416
922
728
PHNSY 1996 RIF
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998

Increase the quantity of ship work accomplished in the region by integrating I and D level resources

- Reduce infrastructure
- Reduce overhead
- Improve processes

Better use available manpower

Pearl Harbor NSY

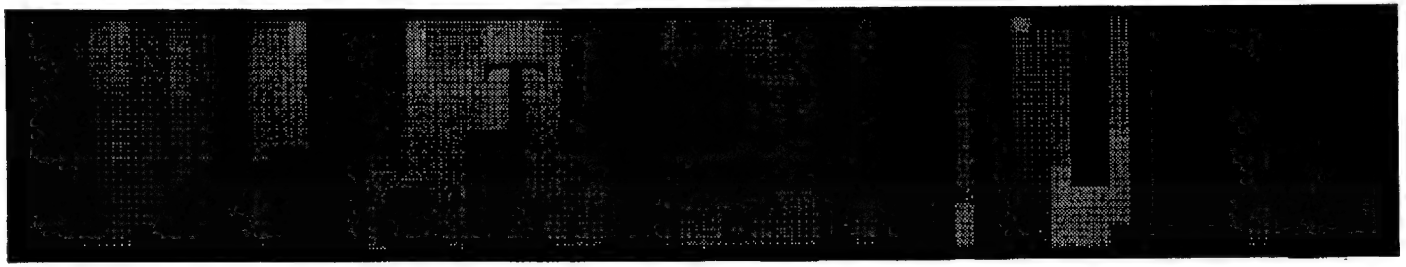
2,680 CIVPERS
44 Military

PHNSY & IMF
Pearl Harbor Naval Shipyard and Intermediate Maintenance Facility

Intermediate Maintenance Activity

593 CIVPERS
712 Military

- Single Activity Commander
- Maximize Shipboard Productive Work
- Minimize Overhead
- Eliminate redundant functions & facilities
- Capture "Best Practices"
- Single up
  - Processes
  - Instructions
  - Training



STAND-UP TRANSITION TEAM

CONGRESS APPROVES

CHANGE OF COMMAND

OFF-SITE STRATEGIC PLAN

COMPLETE FACILITIES STUDY

START-UP

1997 SEP	OCT	NOV	DEC	1998 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT

COMP PILOT STUDY

ORGANIZATION STRUCTURE ESTABLISHED

PERSONNEL ACTIONS COMPLETE

SHIFT TO MISSION FUNDING

USS FREDERICK (UPK) 2/9 – 2/26

FIRST SURF MIMS

4/3 – 5/7 USS SANTA FE (UPK)

4/6 – 5/10 USS LOUISVILLE (UPK)

USS LOS ANGELES/ USS BUFFALO SRAS 1/12 – 5/12

3/2 – USS INDIANAPOLIS IA – 12/22/98

5/11 – USS CHICAGO DMP – 5/11/99

6/10 – 8/10 USS SANTA FE SRA

[redacted]

Operations Officer

300N

Projects

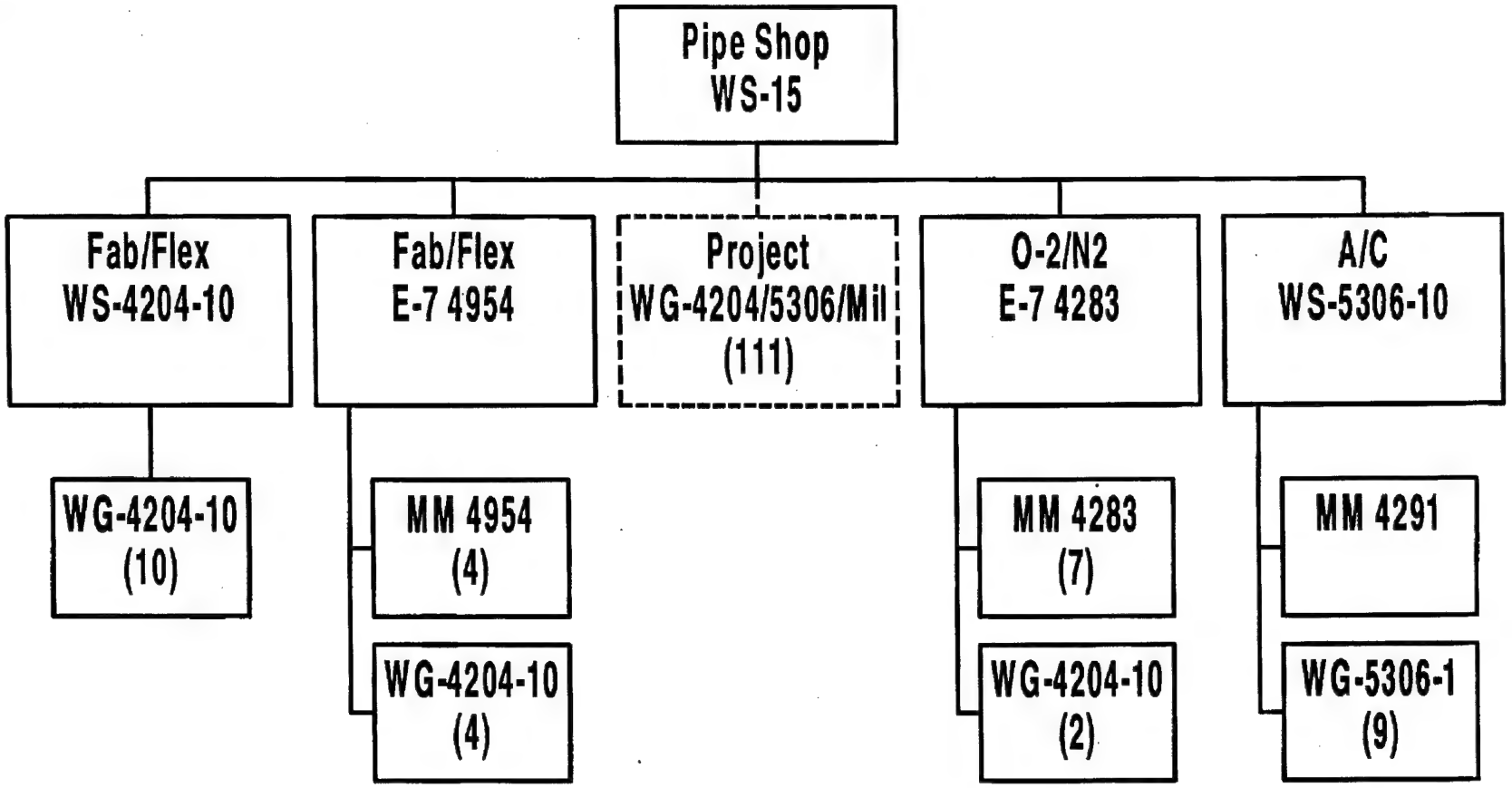
Proj Supt SUB FMA | Proj Supt SURF FMA | Proj Supt DMPs | Proj Supt SUB SRAs | Proj Supt INACS | Proj Supt SURF SRAs

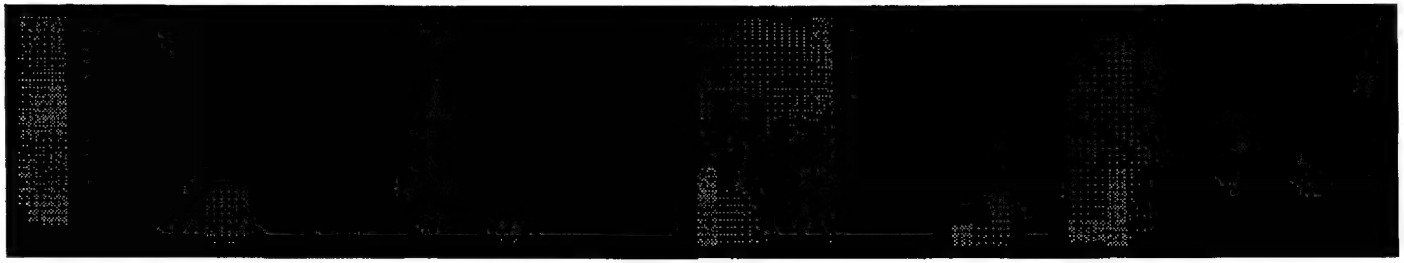
Resource Allocation Process

APPRENTICES & NEW HIRES

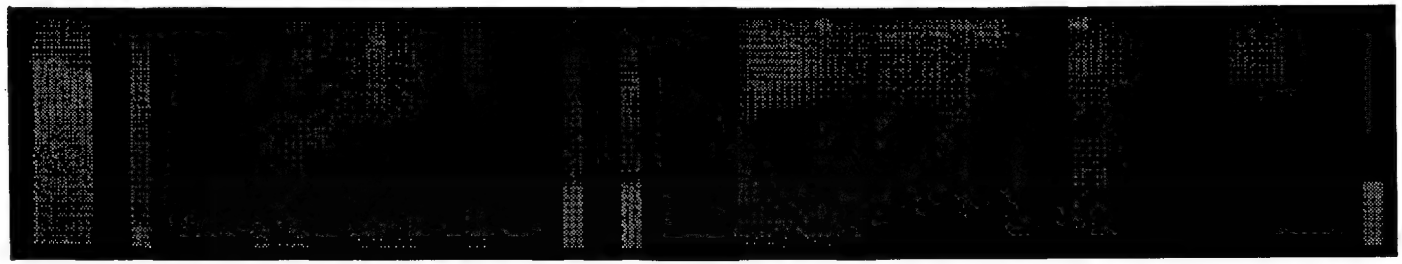
ATTRITION

PEARL HARBOR SHIPWORK BACKLOG


Pipe Shop
WS-15
Fab/Flex
WS-4204-10
Fab/Flex
E-7 4954
Project
WG-4204/5306/Mil
(111)
O-2/N2
E-7 4283
A/C
WS-5306-10
WG-4204-10
(10)
MM 4954
(4)
WG-4204-10
(4)
MM 4283
(7)
WG-4204-10
(2)
MM 4291
WG-5306-1
(9)



- Availability Planning
- Work Induction
- Job Planning
- Resource Allocation
- Quality Assurance
- Work Certification
- Industrial Management Information Systems



- Singling up Backshops
- Demolition Plan
- Consolidation/Modernization

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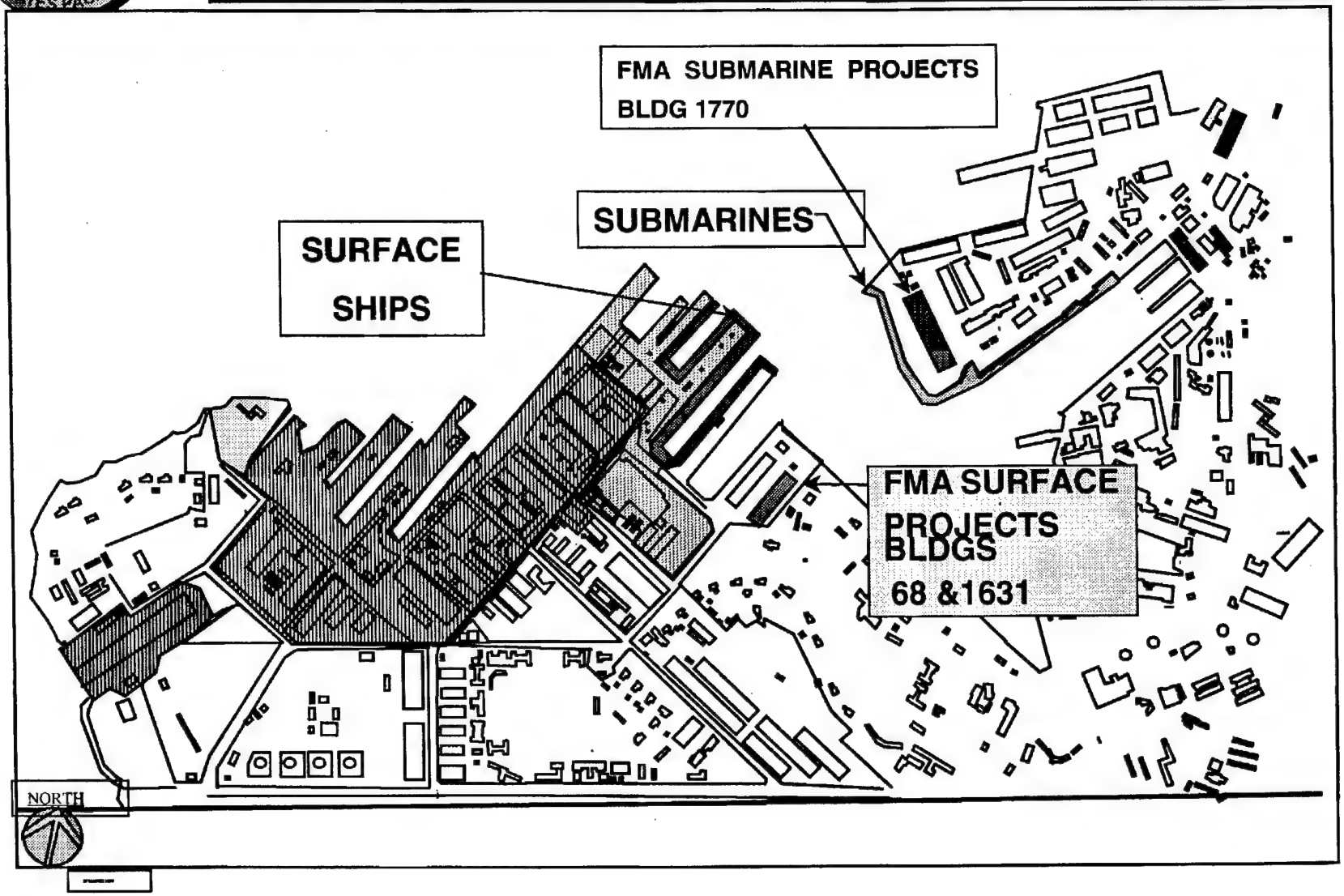
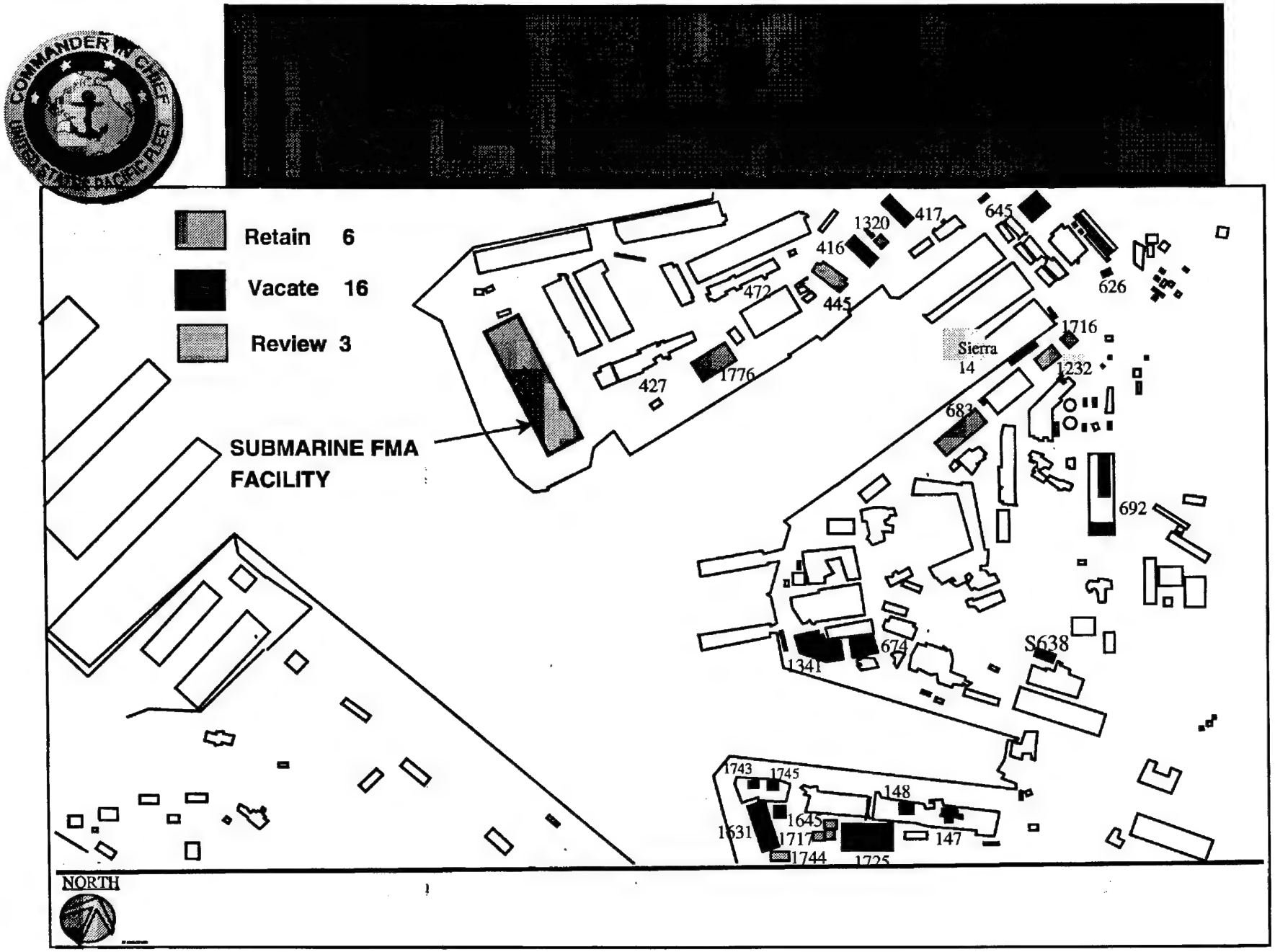

FMA SUBMARINE PROJECTS
BLDG 1770
SUBMARINES
SURFACE
SHIPS
FMA SURFACE
PROJECTS
BLDGS
68 &1631
NORTH


Retain 6
Vacate 16
Review 3
SUBMARINE FMA FACILITY
1320
417
645
416
626
472
445
1716
Sierra 14
1232
427
1776
683
692
S638
674
1341
1743
1745
148
1645
1631
1717
147
1744
1725
NORTH

- **Fleet Maintenance Availabilities and CNO Availabilities**
  - Quality
  - Schedule
  - Cost
  - Responsiveness
  - Productivity
- **Customer Interface Process**
- **Relocation of Personnel**
- **Shift to Mission Funding**
- **Balancing Resources**
- **Workforce Revitalization**
- **Refining Processes**
- **Facility Management**
- **Attitude Improvement**

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FY97 is the baseline year

- Navy Audit Service, DOD IG and GAO involved
- Assessment metrics are as follows:
  - QUALITY - Data collection and analysis and Formal customer surveys covering product reliability and operability.
  - COST PER UNIT OUTPUT - Cost per Production Shop man-hour delivered.
  - PRODUCTION EFFICIENCY - Total activity manhours (direct/indirect) to deliver one Production Shop man-hour.
  - SHIP MATERIAL READINESS - CSMP Work Items Accomplished.
  - SCHEDULE ADHERENCE - On time completion of availabilities.
  - EARNED VALUE - Compare cost to perform similar work before/after.

- MEO (Design & populating)
- Union Survivorship/Partnership (IMF was non-union)
- FMAs under "Total Project Management"
- Co-Location of FMA Project Teams with Customers
- AIS system requirement
- Tailoring Shipyard Processes (60 RPM) to the FMA pace (1200 RPM)
- Full time Transition Team
- Metrics
- Facility Consolidation Plan


COMMANDER IN CHIEF
UNITED STATES PACIFIC FLEET

BACKUP

- Union/Management Partnership Council
- Planning Board for Training
- Operations/Resources Leadership Council
- PHNSY & IMF/FISC Partnership Council
- Facilities & Tooling
- Position Management Board
- Financial Control Board
- Quality Council
- Occupational Safety & Health Committee
- Environmental Compliance Committee
- Customer Relations

Committees are appointed to address issues of long-term concern. Each committee will manage the business of PHNSY & IMF to meet the specified objectives.

Target 1: FY 1999 Cost Targets:

- ❖Complete all work assigned within customer budget for each avail
- ❖Reduce direct OT by 10% ($2.2M savings) C/300 responsibility
- ❖Reduce direct material costs by 10% ($3.6M savings) C/200 responsibility
- ❖Reduce non-labor overhead costs by 5% ($2.8M savings)

Target 2: FY 1999 Work Accomplishment:

- ❖Reduce the total CSMP for PH home ported ships by 10%

(Note: The Operations Officer has the lead on determining methods to achieve this target)

Target 3: Schedule Adherence:

- ❖100% on-time completion.

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- MEO (Design & populating)
- Union Survivorship/Partnership (IMF was non-union)
- Pre-engineering Process changes
- FMAs under "Total Project Management"
- Co-Location of FMA Project Teams with Customer N4's
- MIMS
- Resource Allocation under "Total Project Management"
- Tailoring Shipyard Processes (60 RPM) to the FMA pace (1200 RPM)
- Full time Transition Team
- Metrics
- Facility Consolidation Plan

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- 1996 RIF
- SHAPEC
- BAIM
- Budget (CIVPERS Manning)
- Sea-Shore Rotation (Military Manning)
- Crane Department
- Supply Partnership
- Workload

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- Productivity
- Overtime
- Fragmentation
- Training
- Revitalization
- Quality
- Passive Resistance to change
- Passive Acceptance to failure
- Union/Management Relationship
- Accountability of Senior Civilians

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- Union - Management Partnership
- Civilian - Military Workforce synergy
- Sharp focus on Fleet Operational Readiness

  "We Keep Them Fit to Fight"
- Develop and deploy departmental metrics & goals
- PDCA Processes
- Stable employment for people of the Islands:
  - Continuously Revitalized workforce
- Expand the Strategic Plan to 5 year horizon

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DEPOT MAINTENANCE SYMPOSIUM
SENIOR LOGISTICIANS PANEL
SCRIPT FOR MAJ GEN ZETTLER

I WOULD LIKE TO ENTER THESE DISCUSSIONS BY SHARING THREE POINTS WITH YOU FROM MY PERSPECTIVE AS THE AIR FORCE DIRECTOR OF MAINTENANCE:

- THE CRITICALITY OF MODERNIZING INFORMATION SYSTEMS TO ACCOMPLISH OUR 21ST CENTURY MISSION RESPONSIBILITIES
- PROVIDING THE LOWEST COST DEPOT MAINTENANCE TO OUR FORCES
- FACTORS WE SHOULD CONTEMPLATE IN OUTSOURCING UNIT LEVEL MAINTENANCE FUNCTIONS

FIRST, **MODERNIZING INFORMATION SYSTEMS**.
THE FY 1996-2001, DEFENSE PLANNING GUIDANCE STATED:

"IN ORDER TO SUPPORT INCREASING FUNCTIONAL REQUIREMENTS FOR INFORMATION WHILE IMPLEMENTING OVERALL REDUCTIONS IN THE BUDGET, THE DEPARTMENT MUST ACCELERATE THE PACE AT WHICH IT SELECTS AND DEPLOYS MIGRATION SYSTEMS, IDENTIFIES STANDARD DATA, AND CONDUCTS BUSINESS PROCESS REENGINEERING ACROSS ALL FUNCTIONS."

IN THE MAINTENANCE ARENA, THE AIR FORCE HAS TAKEN ON THIS CHALLENGE THROUGH DEVELOPMENT OF THE INTEGRATED MAINTENANCE DATA SYSTEM, OR IMDS. IMDS IS AN EVOLUTIONARY DEVELOPMENT PROGRAM THAT WILL PROVIDE THE AIR FORCE WITH A SINGLE MAINTENANCE INFORMATION SYSTEM, REPLACING OR INTEGRATING ALL--AND MY VISION IS

ALL--EXISTING MAINTENANCE INFORMATION SYSTEMS--FROM THE FLIGHTLINE THROUGH THE DEPOTS. IMDS WILL NOT ONLY ALLOW US TO ELIMINATE THE NUMEROUS LEGACY SYSTEMS, BUT WILL ALSO PROVIDE THE TECHNOLOGY AND ENVIRONMENT TO REENGINEER THE WAY WE DO BUSINESS, SUCH AS: CREATING A PAPERLESS ENVIRONMENT AND ELIMINATING THE NUMEROUS FORMS CURRENTLY REQUIRED; AUTOMATICALLY COLLECTING DATA, THUS ALLOWING THE MAINTAINER TO BETTER PROVIDE SUPPORT TO OUR COMBAT FORCES; ALLOW DATA ENTRY AT THE POINT OF MAINTENANCE, THEREFORE, INCREASING DATA ACCURACY AND PREVENTING REDUNDANT DATA ENTRY; AND AUTOMATICALLY SCHEDULING INSPECTIONS, TCTOs, TIME CHANGE ITEMS, ETC.

IMDS HAS ALSO BEEN IDENTIFIED AS ONE OF OUR LOGISTICS INFORMATION SYSTEMS THAT WILL FIT UNDER THE GLOBAL COMBAT SUPPORT SYSTEM UMBRELLA; THUS LEADING TO AN INTEGRATED LOGISTICS SYSTEM RATHER THAN JUST ANOTHER STOVE-PIPED MAINTENANCE SYSTEM. AS IMDS IS BEING DEVELOPED, WE ARE WORKING WITH THE OTHER LOGISTICS FUNCTIONAL AREAS TO ENSURE THEY CAN ALL SHARE AND EXCHANGE INFORMATION. FOR EXAMPLE, IMDS WILL PROVIDE THE MAINTENANCE TECHNICIAN WITH THE CAPABILITY TO ORDER PARTS FROM FLIGHTLINE AND WHILE TRANSPARENT TO THE USER, IMDS WILL BE

INTERFACING WITH THE SUPPLY SYSTEM [EITHER SBSS OR INTEGRATED LOGISTICS SYSTEM-SUPPLY].

WHILE IMDS HAS MADE IMMENSE PROGRESS, THERE ARE STILL NUMEROUS MOUNTAINS AND CHALLENGES THAT WE MUST OVERCOME BEFORE WE CAN DECLARE VICTORY. THE FIRST IS REENGINEERING THE PROCESSES. REENGINEERING AT THE BASE-LEVEL IS SLOWLY UNDERWAY, BUT IT IS A MAJOR CHALLENGE STANDARDIZING THE PROCESSES FROM COMMUNITIES AS DIVERSE AS THE COMBAT AIR FORCES, STRATEGIC AIRLIFT, GUARD AND RESERVE FORCES, AND SO ON. AN EVEN BIGGER CHALLENGE IS TO REENGINEER THE DEPOT MAINTENANCE PROCESSES! THE AIR FORCE HAS NOT YET BEGUN TO GET THEIR ARMS AROUND THIS MASSIVE PROBLEM. OUR DEPOTS HAVE A UNFATHOMABLE NUMBER OF LEGACY INFORMATION SYSTEMS, MANY OF WHICH ARE UNIQUE AND STOVE-PIPED.

DESPITE THESE OBSTACLES, WE ARE COMMITTED TO FIELDING THE INITIAL INCREMENT OF IMDS AT THE END OF FY 00.

WE STILL HAVE MUCH TO ACCOMPLISH--IN FACT WE ARE REALLY ONLY EMBRYONIC--BUT WE ARE MAKING PROGRESS AND WE ARE COMMITTED TO MAKING THIS SYSTEM A SUCCESS--BECAUSE IN OUR CURRENT ENVIRONMENT AND LEVELS OF ACTIVITY, WE CAN'T CONTINUE TO MAINTAIN OUR READINESS WITHOUT TOOLS LIKE IMDS.

TURNING TO THE SECOND AREA OF A**DEPOT STRATEGY**..

MOST ORGANIC DEPOT WORKLOAD IS ASSIGNED BASED ON MISSION, COST CONSIDERATIONS, AND OCCASIONALLY EMOTIONS. HOWEVER, WE RETAIN "CORE" SUSTAINING WORKLOADS TO ENSURE RETENTION OF THOSE ORGANIC CAPABILITIES WE DEEM CRITICAL TO THE CONDUCT OF OUR WARTIME TASKINGS. IN RESPONSE TO INCREASINGLY ROBUST PRIVATE SECTOR MAINTENANCE SOURCES, MORE RELIABLE WEAPON SYSTEMS AND DECREASED FORCE SIZE, WE'VE REDUCED DEPOT CORE REQUIREMENTS BY A FOURTH OVER THE PAST 3 YEARS. IN DETERMINING THE BEST SOURCE FOR NON-CORE REQUIREMENTS, I AM CONVINCED THAT PUBLIC - PRIVATE COMPETITION WORKS. FOR THE TWO MAJOR COMPETITIONS WE'VE COMPLETED THUS FAR, WE'RE PROJECTING AN ANNUAL SAVINGS OF APPROXIMATELY $800M OVER ~9 YEARS, WHEN COMPARED TO PROJECTED COSTS FOR THE SAME WORKLOAD FOR THE SAME PERIOD. THESE SUCCESSES SUGGEST WE SHOULD CONTINUE TO EMPLOY THESE COMPETITIONS TO WORKLOAD ASSIGNMENTS PAST THE CURRENT ROUND OF DEPOT CLOSURES. WE'VE GONE TO EXTRAORDINARY LENGTHS TO LEVEL THE PLAYING FIELD AND HAVE ENFORCED THE RULES IN OUR COMPETITIONS – THERE SHOULD BE NO QUESTION AT THIS POINT AS TO THE INTEGRITY OF THE PROCESS. INDUSTRY NEEDS TO STEP UP TO THIS CHALLENGE AND ENTER COMPETITIONS WHERE THEIR CORE COMPETENCIES AND GOOD BUSINESS PRACTICES WILL YIELD COMPETITIVE BIDS. LIKEWISE, I FIRMLY BELIEVE THAT THE DEPOTS SHOULD BE FORCED TO RE-ENGINEER THE CORE WORKLOAD PROCESSES TO ACHIEVE THE SAME SAVINGS ACHIEVED IN THE COMPETITIONS. THE WINNER FROM ALL THESE

ACTIVITIES WILL BE NOT ONLY THOSE ENTITIES GAINING THE WORK, BUT THE AMERICAN TAXPAYERS.

FINALLY, I'D JUST LIKE TO SAY A FEW WORDS ON**OUTSOURCING OF FIELD LEVEL MAINTENANCE**..

WE NEED TO CAREFULLY SELECT AND EVALUATE OUR TARGETS FOR OUTSOURCING MAINTENANCE FUNCTIONS AT THE WING/UNIT/BASE LEVEL--EVERYTHING IS NOT UP FOR GRABS! CLEARLY IN OUR PEACETIME GARRISON ROLE, AIRCRAFT MAINTENANCE APPEARS TO BE A LUCRATIVE AREA FOR COMPETITIVE SOURCING. HOWEVER--AND IT IS A BIG HOWEVER--WITH THE PULLBACK FROM OVERSEAS BASES AND THE EVOLUTION TO AN EXPEDITIONARY FORCE, A CLEAN LINE OF DEMARCATION NO LONGER EXISTS BETWEEN CRITICAL AND NON-CRITICAL FUNCTIONS. FOREMOST IN OUR MINDS DURING OUTSOURCING DRILLS SHOULD BE THE FACT THAT OUR PEOPLE, WHILE EXTRAORDINARY LOYAL AND DEDICATED TO THE MISSION, HAVE THEIR LIMITS. AS CONUS FUNCTIONS BECOME INCREASINGLY OUTSOURCED, OUR OVERSEAS TASKING FOR THE REMAINING SPECIALISTS RAMPS UP SIGNIFICANTLY. THE RESULT: OUR FINE AIRMAN, SOLDIERS AND SAILORS, WHOM WE'VE SPENT MEGABUCKS TO TRAIN AND WHO PROVIDE THIS COUNTRY ITS WARFIGHTING EDGE, ELECT TO GET OUT. WHY SHOULD THEY STAY? THEY CAN WORK FOR A CONTRACTOR DOING THE SAME JOB, WITH FAR GREATER STABILITY, USUALLY WITH GREATER PAY AND BENEFITS. WE'VE ALREADY SEEN THIS EMERGE AS A SIGNIFICANT FACTOR IN REDUCED RE-ENLISTMENT STATISTICS. IT'S CRITICAL THAT WE PRESERVE A QUALITY OF PROFESSIONAL LIFE FOR OUR MAINTAINERS AND NOT SACRIFICE IT TO MEET OUTSOURCING TARGETS.

SO, WHY IS IT CRITICAL? BECAUSE THERE'S NO GUARANTEE THAT THE NEXT TIME WE NEED THEM--REALLY NEED THEM--THE CIRCUMSTANCES WILL BE NEAT AND CLEAN AND SHORT. WE NEED THEM AS PART OF OUR COMBAT FORCES. WE NEED THEM READY TO GO--NOT READY TO HAVE A CONTRACT CHANGE--AND WE NEED THEM TO DO WHATEVER TASK IS NEEDED IN THE THEATER--NOT JUST WHAT THEY ARE ON CONTRACT FOR!